September-October 1998

PM

Program Manager

Single Process Initiative

Maverick Missile Exchange Agreement — First of Its Kind in the U.S. Air Force

Air Force Lt. Col. Gregory Kuntz
Maverick Development System Manager

Maverick Airframe Team Executes Unique Bartering Arrangement

"The potential of the Single Process Initiative to expedite Acquisition Reform has not been fully realized… it now has more potential than originally envisioned."

Dr. Jacques S. Gansler
Under Secretary of Defense (Acquisition & Technology)

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A BIMONTHLY MAGAZINE OF THE DEFENSE

PROGRAM MANAGER

Vol XXVII, No.5, DSMC 146

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Program Manager (ISSN 0199-7114), published bimonthly by the Defense Systems Management College Press, is a periodical publication paid at the U.S. Postal Facility, Fort Belvoir, Va.

POSTMASTER: Send address changes to:
PROGRAM MANAGER
DEFENSE SYST MGMT COLLEGE
ATTN DSMC PRESS
9820 BELVOIR ROAD
STE 3
FT BELVOIR VA 22060-5565

To subscribe, government personnel should submit written requests (using their business address) to the above address. Government personnel may also telefax their requests to (703) 805-2917 or DSN 655-2917.

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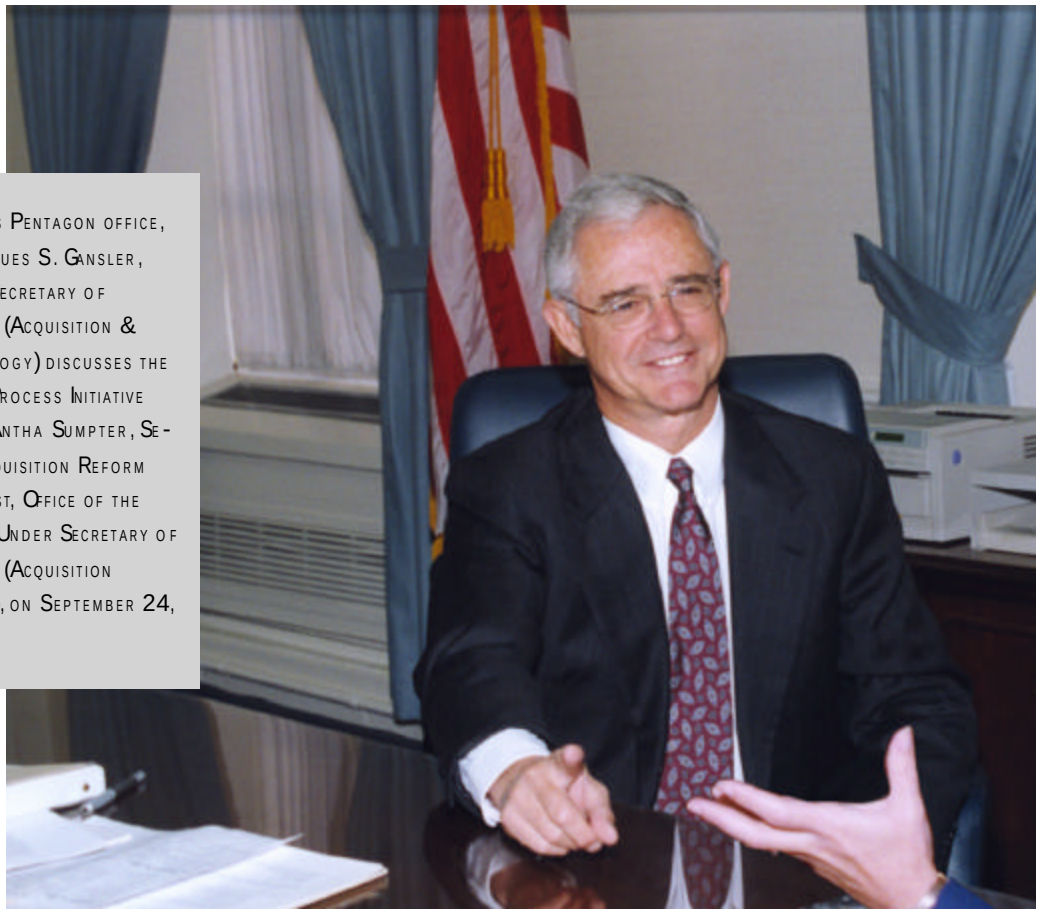
Gansler Endorses Single Process Initiative Throughout DoD—Industry

"Keep An Eye on the Big Picture – Focus on the Long-Term Perspective"

Civil-military integration of government-industry business practices and processes has been a longstanding goal of Acquisition Reform. Simply put, the Single Process Initiative facilitates the elimination of the distinction between traditional defense and commercial suppliers. It is the mechanism by which DoD expedites the transition of existing government contracts to common best processes.



FROM HIS PENTAGON OFFICE, DR. JACQUES S. GANSLER, UNDER SECRETARY OF DEFENSE (ACQUISITION & TECHNOLOGY) DISCUSSES THE SINGLE PROCESS INITIATIVE WITH LEANTHA SUMPTER, SENIOR ACQUISITION REFORM SPECIALIST, OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE (ACQUISITION REFORM), ON SEPTEMBER 24, 1998.

In response to a joint government-industry desire to establish a long-term vision for implementation of the Single Process Initiative (SPI), Under Secretary of Defense (Acquisition & Technology), Dr. Jacques S. Gansler, published a memorandum in June 1998 to institutionalize the Single Process Initiative. His vision is that SPI will be a long-term government-industry initiative, designed to accelerate the pace of business process re-engineering.[1] Specifically, Dr. Gansler:

- Directed Component Acquisition Executives (CAE) and the Commander, Defense Contract Management Command to promulgate guidance ensuring that block change modifications are written in performance language, whenever practicable.
- Pointed out the importance of the corporate SPI Management Councils.
- Directed Service Acquisition Executives (SAE) to review, and discuss with him personally, progress in identifying impediments to implementing SPI within the Services.
- Appointed the Principal Deputy Under Secretary of Defense (Acquisition & Technology) as Chair of the Single Process Initiative Executive Council.[2]

Giving voice to concerns and questions raised by the Services, LeAntha Sumpter, a Senior Procurement Reform Analyst with the Office of the Deputy Under Secretary of Defense (Acquisition Reform), recently interviewed Dr. Gansler on the current and future usefulness of the Single Process Initiative throughout DoD.

Unequivocally, Gansler's responses indicate that SPI is here to stay – that "the potential of the Single Process Initiative to expedite Acquisition Reform has not been fully realized," and it "now has more potential than originally envisioned."

Ultimately, Gansler believes those firms that pursue SPI are going to be the most

Sumpter is a Senior Acquisition Reform Specialist in the Office of the Deputy Under Secretary of Defense (Acquisition Reform, The Pentagon, Washington, D.C.

Photos by Richard Mattox

successful in achieving a lean approach to conducting business.

Q

What is your assessment of the Single Process Initiative? Where has it succeeded, and where has it failed? What is its most important contribution in the overall scheme of Acquisition Reform?

A

The Single Process Initiative has expedited the transition of legacy contracts to common best practices, including non-government and commercial standards. SPI has had a positive impact on the way the Department conducts business by facilitating industry consolidations and plant modernization, and encouraging innovation and subcontractor reform.

Specifically, SPI's success in facilitating civil-military integration is demonstrated by the following facts: There have been 201 facility conversions to commercial quality standards; 21 facility conversions to commercial Earned Value Management Systems; 23 facility conversions to commercial parts management practices; 47 facility conversions to commercial soldering standards; and 27 facility conversions to commercial calibration standards in the past two-and-one-half years. This could not have been accomplished without the Single Process Initiative.

On the other hand, the potential of the Single Process Initiative to expedite Acquisition Reform has not been fully realized. There is a strong correlation between SPI success and proactive leadership on specific initiatives by the DoD (i.e., 84 percent of proposed quality conversions from MIL-Q-9858A were approved).

Likewise, a similar correlation exists for the reform areas where SPI has not been so successful. SPI has successfully expedited Acquisition Reform, but there is much left to be done to achieve greater civil-military integration and adopt commercial practices throughout the traditional defense supplier base.

Q

What is the overarching goal of SPI and what are the expected benefits? Have the goals and projected benefits of SPI changed since its inception? If so, how?

A

The ultimate goal of SPI is to pave the way for DoD's conversion to commercial processes, while providing opportunities for DoD to reduce costs. SPI has provided a streamlined process for converting existing contracts to non-government standards, commercial practices, and company processes. The initial emphasis was on converting military specifications and standards to non-governmental facility-wide processes, but SPI offers a greater benefit as a mechanism to achieve civil-military integration.

Q

What is the future of SPI? Do you expect that its usefulness will be diminished as we move more toward a PBBE?

A

As I discussed previously, when SPI was initiated it was envisioned as a tool to facilitate military specifications and standards reform in a short time frame. The anticipation was that the Department would quickly transition to a Performance Based Business Environment [PBBE].

Industry and government teams have learned over the past two-and-a-half years that reform efforts require a long-term focus, and that cultural changes occur gradually. In fact, the average time to achieve sustained change is seven years. My long-term vision for SPI is that it now has more potential than originally envisioned. This tool is key to achieving my goal of facilitating civil-military integration.

Additionally, similar to the success of Integrated Product Teams, the value of an industry-government Management Council that addresses facility or corporate issues is the key to SPI success. This organizational arrangement encourages the Services and the Defense Contract Management Command to work together to develop corporate solutions. This will be of lasting value to the Department.

Q

Do you realistically expect to receive the SPI ROM [Rough Order Magnitude] savings that industry has projected over the past few years? If so, when and in what form?

A

Estimated implementation costs, immediate contract savings, and cost avoidance applicable to future contracts are negotiated by the Defense Contract Management Command [DCMC] and validated by the Defense Contract Audit Agency [DCAA]. So far, negotiated savings to existing contracts are $30 million, and cost avoidance is $444 million.

DCAA and DCMC have the responsibility to follow up on cost avoidance projections to ensure that direct or overhead expenses are reduced based on the approved changes. I think these numbers, however, are an understatement of the potential of SPI.

To assess the long-term value of this initiative, we must also focus on assessing associated infrastructure reductions that result from SPI reform. While it is difficult to specifically capture the total value of this initiative to the Department, it is an indispensable tool to move the Department toward more commercial ways of doing business.

Q

What is industry's role in future Acquisition Reform efforts, and in particular, SPI?

A

Industry must continue to play an important role in Acquisition Reform. Government and industry must work together to share best practices and achieve a Revolution In Business Affairs by doing things better, faster, and cheaper.

Only by working together will we be able to share valuable experiences and exploit best practices. I encourage all of you to *keep the ideas coming.* Post your successes on your Web sites. I challenge industry to share successes as well as failures to avoid repeating the same process.

With respect to the Single Process Initiative, it continues to be a contractor-initiated reform. Those firms that pursue SPI are going to be the most successful in achieving a lean approach to conducting business.

There are a myriad of opportunities to employ SPI and save both the government and industry significant resources. There is tremendous potential to use SPI to expedite the transition to not only a Performance Based Business Environment, but also to an integrated digital environment.

Additionally, corporate-wide Management Councils can add value by providing a mechanism to share strategic vision and good ideas across corporations. Industry, in turn, must push SPI to its supplier base so that all those who supply the government, either directly or indirectly, can reap the benefits of SPI cost avoidance and cost savings. The key is making sure that the process keeps moving forward and possibilities for savings increase.

"Industry must continue to play an important role in Acquisition Reform…Only by working together will we be able to share valuable experiences and exploit best practices. I encourage all of you to keep the ideas coming. Post your successes on your Web sites. I challenge industry to share successes as well as failures to avoid repeating the same process."

Q

What advice and/or encouragement would you give to DoD program managers who support Acquisition Reform initiatives but have yet to realize tangible benefit(s) from their efforts?

A

The Department is facing a very real budget crisis. The efforts of each and every program manager are essential to achieve the Revolution in Business Affairs and reduce unnecessary infrastructure costs.

The Single Process Initiative offers each program manager the opportunity to exercise conscious risk management decisions to migrate their program to more commercial processes and practices. The initial goal should not be to achieve instant savings but to take a long-term perspective. Program managers should focus on some of the advantages of SPI which offer the potential for a "win-win" situation for both government and industry. Some of the advantages include: allowing contractors to use "best " business and manufacturing practices to improve the quality and ingenuity of products and services; elimination of unnecessary, and often redundant, DoD requirements; and, ultimately decreased prices for future contracts.

I applaud the efforts of the SPI pioneers over the past few years who have achieved dramatic successes on both large and small programs.

Q

Do you expect that the benefits of Acquisition Reform will ever be observed at the PM level? If so, how?

A

The program managers who have achieved the greatest benefits from Acquisition Reform are those who have aggressively embraced reform initiatives. Institutionalization of Acquisition Reform, including education and training, is critical to the future of the Department. Once reform initiatives become an integral part of doing business, the benefits will increase.

Program managers need to accept the fact that external events have created a culture of continuous change, which has endless possibilities even though it is intrinsically chaotic. The evolution of the Department to greater civil-military integration will result in reduced cycle times, lower cost, greater choices of product for our warfighters, and more creative opportunities to access an expanded supplier base.

These are all areas where real progress has been made, directly observed, and supported by program managers. For those who have not experienced these benefits, I challenge you to get involved and make a difference.

Q

The SPI program is a voluntary participant program by the contractors. Why does DoD continue to send letters to contractors that are not participating?

A

There are currently about 300 contractor facilities participating in SPI. While this has generated over 1,000 block change modifications, the potential exists to generate even more block changes resulting in greater savings with a broader impact. It is important to encourage contractors who were previously not interested in SPI to take a second look and discover that SPI can help them achieve their business goals. The ultimate beneficiary of this initiative is the warfighter.

Q

For the Component Team Leader in a program office that has a large contractor participating, the operating funds for SPI come from within the PM's budget.

Some of the PMs do not have a large budget, but spend a significant amount for SPI (TDY funds for Management Councils) yet receive no direct benefits. With cost avoidances being less than expected, do you see any relief for the PMs in the future?

A

I appreciate the real budget constraints that challenge each program office. However, I expect Program Executive Officers [PEO], along with their Component Acquisition Executives, to review their current SPI activity, and commit appropriate resources for continued support. Unless we collectively pursue Acquisition Reform agendas, we will mortgage the future ability of the Department to modernize products. We must look to tap into the commercial sector in order to keep pace with current technology.

"The 120-day time frame for executing a block change has been one of the keys to success of the Single Process Initiative. Time wasted is savings lost and, corporately, we can ill-afford to delay initiatives that will save us money…"

Ten years ago, the Department was able to keep pace with the commercial sector. Now, constrained by our past acquisition and configuration management practices, we must aggressively pursue civil-military integration to close the gap between the commercial capability and our increasing obsolescence. It will take the commitment of each PEO and PM, with a long-term perspective, to make this transition possible.

Q

Dr. William J. Perry's memorandum of June 1994 described a vision that dramatically changed the nature of the acquisition process in DoD. SPI was initiated as a means to achieve DoD's specifications and standards goal. What is our current SPI focus?

A

The focus of SPI has been and still is to establish a partnership between industry and government to migrate to best practices and ultimately lower the costs of products acquired for the Department. Military specifications and standards reform is but one positive manifestation of the Single Process Initiative. As the initiative has matured, its potential value to the Department has grown. The current focus of SPI has been broadened to include the integration of commercial and military facilities.

My June 3, 1998, memorandum envisions a long-term perspective for SPI that includes the following: the need for block change modifications to be written in performance-based language, the need for both prime contractors and suppliers to use SPI to transition to PBBE, and the need for corporate Management Councils to expedite reform and facilitate best practices across an entire corporation.

SPI implementation has not happened as quickly as I would have liked, but I believe that the potential to expand the industrial base, lower costs, and shorten response and cycle time, among other benefits, more than offset any short-term challenges in implementing SPI. I want you all to press ahead with SPI implementation and share your successes within the Department so that we all may benefit.

Q

There seems to be a contest on which government agency can get more block changes than the other. Why so much emphasis on metrics?

A

It is important to sustain a sense of urgency about Acquisition Reform or, as I indicated before, risk mortgaging the future ability of the Department to modernize our forces. The Defense Contract Management Command collects and analyzes a wide range of SPI data and metrics to measure the health of the SPI process and report to me on a monthly basis. While the initial emphasis was on encouraging numbers of SPI participants

and concept papers, other metrics have evolved. This is not a contest; however, I believe that all concept papers should be given a chance for approval.

Q

After reviewing several months of metric reports, it seems that the "120-day" time frame is difficult to meet. Should the 120-day time frame be reassessed? DoD agencies are put on report for being overdue, when in fact the delay may be caused externally. Why is so much emphasis put on this "120-day rule"?

A

The 120-day time frame for executing a block change has been one of the keys to success of the Single Process Initiative. Time wasted is savings lost and, corporately, we can ill-afford to delay initiatives that will save us money, so it was important to create a sense of urgency for implementing industry innovations and efficiencies.

I recognize that not every concept paper can be approved within 120 days. However, keeping a focused pressure on this process is important. Embracing the Integrated Product Team approach, I strongly encourage Management Councils to work with contractors during concept paper development. This up-front planning should facilitate a timely approval, not cause delays.

DoD Components are not put "on report" for being overdue; however it is important to identify causes for delay and, when appropriate, expedite those reforms. For the most part, the process has worked well and the majority of SPI proposals are implemented within this time frame. I commend all of you, both government and industry, in successfully implementing these streamlining initiatives.

Q

What initiatives have been undertaken or are planned to rationalize/standardize processes at the Prime and OEM [Original Equipment Manufacturer] level in order to "flow down" cost-reduction opportunities to lower-tiered subcontractors and the ultimate customers?

"…It will take the commitment of each Program Executive Officer and program manager, with a long-term perspective, to make the Revolution In Business Affairs possible. Focusing on instant savings is counterproductive. Instead, keep an eye on the big picture—focus instead on the long-term improvements that result in the most efficient use of program dollars."

A

A number of traditional defense suppliers have taken the initiative to expand the Single Process Initiative to their subtier suppliers, through enabling clauses and supplier conferences and councils. This initiative, critical to the future success of SPI, will facilitate the adoption of industry best practices across the supplier base and provide access to commercial products from non-traditional defense suppliers.

Industry has realized over the past two years that, to facilitate adoption of best practices, it is important for prime suppliers to encourage sub-tier suppliers to "flow up" best practices rather than "flow down" practices on the suppliers.

Additionally, by consciously reducing prime contractor oversight, it is possible to eliminate process details at the subtier level and ultimately reduce the cost of future products. One unanticipated benefit of the SPI has been the dialogue it has created across the supplier base and the synergy of ideas for reform that are beginning to emerge.

Q

How does a program justify spending their limited resources working "long-term perspective" SPI proposals or contract changes that do not benefit their instant contracts or program?

A

As I indicated before, it will take the commitment of each Program Executive Officer and program manager, with a long-term perspective, to make the Revolution In Business Affairs possible. Focusing on instant savings is counterproductive. Instead, keep an eye on the big picture – focus instead on the long-term improvements that result in the most efficient use of program dollars.

Some improvements made possible by the SPI include modernization, use of commercial products and processes, technology insertion opportunities, and decreased prices for future contracts. While not all of these benefits result in instant savings, a corporate focus on the larger benefit to the Department is important.

The big picture is that SPI's long-term improvements will eventually, if not immediately, result in the most efficient use of program dollars. Clearly, SPI makes good business sense, and we must use it as but one of the tools to achieve Acquisition Reform.

Q

FAR [Federal Acquisition Regulation] waivers in general, and government property changes in particular (the biggest opportunity is also the biggest concern), are taking a very long period of time without resolution or feedback of status. Can anything be done to move the other Agencies?

A

I have asked my Principal Deputy, Dave Oliver, to chair a Single Process Initiative Executive Council comprised of the Service Acquisition Executives and other senior Department officials. Stan Soloway, the Deputy Under Secretary of Defense (Acquisition Reform), is the Vice Chair of this Council; and General Malishenko, Commander, Defense Contract Management Command, is the Executive Secretary. I have high expectations for this Council to facilitate the future success of this initiative.

Q

Are there any plans to "incentivize" industry to participate further in the program?

A

SPI remains a voluntary program, and there are currently no plans to specifically incentivize industry to participate. The ultimate incentive is to use the SPI to adopt lean business practices, integrate commercial and defense practices within a company, and ultimately compete and win future business.

Additionally, as many defense suppliers are discovering, the SPI has also facilitated corporate mergers and consolidations, allowing industry to develop corporate best practices and quickly integrate those new business entities. SPI provides a way for companies to embrace performance-based requirements and position themselves to operate in a Performance Based Business Environment.

Q

Do you think the Department of Defense Inspector General [DoD IG] or General Accounting Office [GAO] should examine the SPI to see if the Report of Investigation is worth what DoD is putting into the program?

"SPI remains a voluntary program, and there are currently no plans to specifically incentivize industry to participate. The ultimate incentive is to use the SPI to adopt lean business practices, integrate commercial and defense practices within a company, and ultimately compete and win future business."

A

As a matter of fact, the DoD Inspector General issued a report on March 14, 1997, which evaluated DoD's implementation of the Single Process Initiative. There were no adverse findings in that report.

I must remind all of you to avoid taking the myopic approach to the benefits to be realized by the Single Process Initiative. As I have previously mentioned, the benefits may not have immediate measurable monetary returns. How much is it worth when we deploy a weapons system six months earlier than planned, that is able to counter a new deployed weapon capability from a hostile nation? How much is it worth when we are able to deploy a new weapons system that leverages the use of a commercial technology previously unavailable to DoD?

In assessing the success of SPI, the long-term vision must prevail. It is premature to measure the overall impact of this initiative to the Department.

Q

Why is it that Office of the Secretary of Defense [OSD] Web sites continually delineate ISO 9000 Quality Systems, when policy memoranda from OSD state we cannot *require any quality system/program in our acquisition packages?*

The vast majority of savings realized on this program are proposed for the future. The current savings are minimal or nonexistent. The Commands, PEOs, and PMs are funding these programs today. Will OSD or DoD provide funding from these future savings for this program?

A

ISO 9000 should not be placed on contract. Future savings are really cost avoidance. This means that, for the same level of budgeted funds without ISO 9000 on contract, the PM could apply funds to modernization of the product. Or, alternatively, the PM can reduce his or her budget requirements. Conscious risk management decisions by every program manager can help reduce oversight and associated infrastructure costs, thus benefiting the entire Department.

ENDNOTES

1. See *Program Manager* magazine, July-August 1998, Volume XXVII, No. 4, pp. 74-75.

2. On Aug. 28, 1998, Principal Deputy Under Secretary of Defense (Acquisition & Technology), David Oliver, published a memorandum establishing the membership and concept of operations for the Single Process Initiative Executive Council.

AMERICAN FORCES PRESS SERVICE

Agency Unifies DoD Threat Reduction Effort

JIM GARAMONE

WASHINGTON — Calling it an important step in combating the spread of weapons of mass destruction, Deputy Defense Secretary John Hamre opened the doors Oct. 1 to a new agency specifically structured to meet the growing threat.

During an inauguration ceremony at Dulles International in nearby Loudoun County, Va., Hamre participated in ceremonies officially opening the Defense Threat Reduction Agency. "In the 10 years since the Berlin Wall came down, we have been in a period of transition," Hamre said during a Pentagon news briefing. He said the world must worry about what the future may bring. The past, dominated by the rivalry between the United States and the Soviet Union, meant a simple choice between two ideologies. The world since the fall of communism is "startlingly complicated," Hamre said, and highlights the need for an organization like [the] Defense Threat Reduction Agency.

The agency, directed by Jay C. Davis, is the merger of the Defense Special Weapons Agency, the On-Site Inspection Agency, the Defense Technology Security Administration, and Pentagon offices concerned with chemical, biological, and nuclear weapons. It is based in the former inspection agency's facilities adjacent to Dulles.

The agency's creation was mandated in the Defense Reform Initiative of November 1997. Though the initiative contains many cost-cutting measures, this isn't one of them, Hamre stressed.

"In fact, I think [counterproliferation] is, unfortunately, a growth industry," he said. "Aside from some savings from consolidating administrative support, I think we may be adding to the agency budget." The agency's fiscal 1999 budget is $1.3 billion, and half its more than 2,000 personnel are military.

The new agency is a result of the increasing threat posed by weapons of mass destruction. "We realized [DoD] was not organized efficiently to counter this threat," said Air Force Maj. Gen. Frank Moore, agency deputy director. "We were fragmented and not postured well to respond to an incident."

The consolidation makes the new agency the single point of contact in DoD for weapons of mass destruction. Davis' staff also includes representatives of the FBI, intelligence agencies, and the Department of Energy.

Davis is formerly of Lawrence Livermore Laboratory in California. He will report to Dr. Jacques S. Gansler, Under Secretary of Defense for Acquisition and Technology, who said the agency faces a formidable task. "We are asking them to address every conceivable approach to reducing the threat of weapons of mass destruction," Gansler said.

The new director said the agency will work to define the threat. In addition, his new Advanced Systems Concept Office will be responsible for defining and analyzing emerging threats. The office will have a small core of agency employees and experts from academia, industry, and other government agencies.

"They can help the agency set its course," Moore said.

The Threat Reduction Agency also will be involved in research to improve force protection. Hamre said scientists will work to provide better chemical and biological protective gear for servicemembers. The agency will also look at adapting military gear to outfit civilian emergency workers — "first responders."

"They don't need [military] gear," Davis said. "There's a world of difference between protecting an infantry-

RELEASED Oct. 2, 1998

man who has to fight and maneuver in protective gear for 24 hours and a first responder."

The agency continues the work of its predecessors. One section, for instance, will take charge of DoD's stewardship and technical support for all nuclear weapons; provide emergency response teams for nuclear, chemical, and biological incidents; and provide the Joint Chiefs of Staff with vulnerability assessments – around 100 per year – to help identify ways to protect installations and people.

Another section will continue the on-site inspection program. Agency personnel will verify other nations' compliance with arms control treaties and escort counterpart foreign inspectors in the United States.

The agency will also be the central point of contact for the Cooperative Threat Reduction program. This is the program that helps Russia and other former Soviet republics destroy or relocate their nuclear, chemical, and biological arsenals. "This has to be the most cost-effective defense program we have," Moore said. "A Blackjack bomber destroyed today is one we won't plan to defend against or worry whose hands it might fall into."

The Defense Technology Security Administration's responsibilities also transfer to the new agency. These include ensuring crucial technology does not fall into unfriendly hands. "When the Berlin Wall fell, it was easy to think this would be a friendly world," Hamre said. "But this is not the case. It is a dangerous world, and we have to do more to protect our industrial secrets."

All its components must alloy for it to be successful "What is needed in the future is a degree of integration, internal synergy, and outreach that was not required in the past," said director Davis. "Our mission statement makes this clear: We will reduce the present threat and prepare against the future threat."

Editor's Note: This information is in the public domain at http://www.defenselink.mil/news on the Internet.

Maverick Airframe Team Scores Stunning Acquisition Reform Success

A's for H's - Let's Make a Deal

COLLIE J. JOHNSON

A unique bartering arrangement between the U.S. Air Force and Raytheon offers renewed hope and inspiration to defense program managers who are faced with a reduced procurement budget and the tough choices of not funding a needed weapons upgrade program. A bold, initially risk-laden idea that was previously abandoned for lack of takers, has resurfaced out of the old West as a vital program.

The resultant Maverick Missile Exchange Agreement, a team effort led by former Maverick Development System Manager (DSM), Air Force Lt. Col. Greg Kuntz, and Raytheon's Air-Launched Strike Director, Glenn Kuller, stands as one of the most innovative Acquisition Reform success stories in recent memory.

Establishing a Need

To understand this story, we need to look at two of the eight variants of the Maverick missile: the first Maverick, the AGM-65A; and the last to complete operational testing, the AGM-65H.

In 1972, Hughes Aircraft Company [now Raytheon] delivered the first Maverick, the AGM-65A, in response to an Air Force request during the Vietnam era for a close air support (CAS) weapon to pro-

GLENN KULLER • GREG KUNTZ • M

Johnson is Managing Editor, Program Manager *magazine, Visual Arts and Press Department, Division of College Administration and Services. She is a 1996 recipient of Vice President Gore's "Heroes of Reinvention" Hammer Award.*

vide a catastrophic kill capability when launched from tactical fighter aircraft against mobile targets.

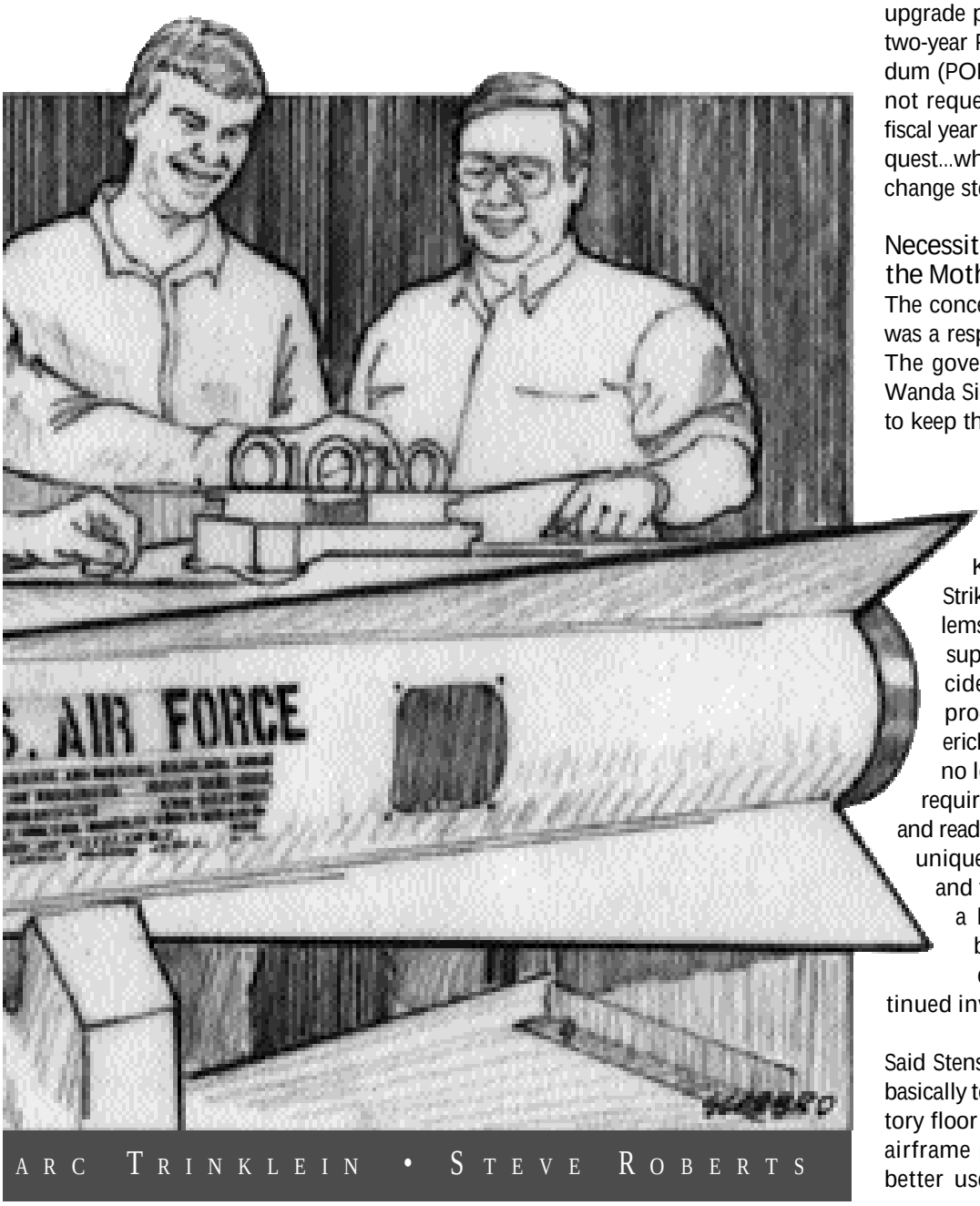
The original Maverick, with a forward-looking, electro-optical (TV) seeker, was a rocket-propelled guided missile that carried a 125-pound, shaped-charge warhead. Once launched, it was designed to knock out mobile tanks and trucks as well as stationary targets.

Following up on their first effort, through the years Hughes and Raytheon delivered seven more variants of the Maverick (Figures 1 and 2).

Now let's fast forward to 1997. Maverick's evolution isn't quite over yet. The AGM-65H, with its charge coupled device (CCD) modern TV seeker technology, circuitry, and associated software provides greater reliability, a clearer picture, longer standoff range, and enhanced tracking capability. Totally replacing some technology on the earliest variants of the Maverick, the "H" Maverick complements, but does not replace the Imaging Infrared (I^2R)-guided missiles.

But despite its capabilities and the Air Force's critical requirement, the AGM-65H variant, which has completed a successful Qualification, Operational Test and Evaluation (QOT&E) by the Air Force, was unable to gain the necessary funding from an Air Force procurement account that has come under constant attack.

In fiscal year 1998 Congress, seeing the urgency of maintaining a TV Maverick capability, added $8 million to keep the upgrade program on track. Due to the two-year Program Objective Memorandum (POM) cycle, the Air Force could-not request AGM-65H funding in the fiscal year 1999 procurement budget request...which is where our Airframe Exchange story begins.



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Necessity, the Mother of Invention

The concept of exchanging A's for H's was a response to that loss of funding. The government's DSM at that time, Wanda Siefke, was searching for a way to keep the program alive.

Meanwhile, Ron Stenstrom, Raytheon's Maverick Production Manager, and Glenn Kuller, Raytheon's Air-Launched Strike Director, had their own problems. Katema, Maverick's airframe supplier of 20-plus years, had decided that with the stop-and-go procurement nature of the Maverick airframe business, they could no longer commit the floor space required to keep the equipment up and ready to build. This situation is not unique to Maverick; many second- and third-tier suppliers are taking a hard look at their defense business and asking tough questions about their continued involvement.

Said Stenstrom, "Finally, they [Katema] basically told us that their portion of factory floor space currently dedicated to airframe production could be put to better use making commuter airline

assemblies." Stenstrom went on to note that Katema did make Raytheon a one-time offer to build as many airframes as needed to fill current and future requirements. However, the company could not accept the risk of buying airframes against an ill-defined future requirement and chose to immediately seek an alternate source.

The Air Force's need to keep the program alive...Kuller's need for a supplier. At some point no one can precisely remember, a meeting of the minds took place. Kuller, after assessing the situation from all sides, resurfaced an old idea that had never gotten off the ground.

An Offer Too Good to Refuse

In essence, Kuller made Siefke an offer the Air Force couldn't refuse: "Trade in missiles, let me take them apart; I'll give you credit for like Maverick hardware purchases," he told Siefke. In other words, Raytheon would buy 1,000 of around 8,000 AGM-65A missiles the Air Force had in "deep storage," take the missiles apart, retain the airframes for use in Foreign Military Sales [FMS] or Direct Commercial Sales, and return the warhead and other explosive components back to the Air Force for demilitarization.

Raytheon would give the Service a credit of $2,155 per airframe to be applied to the AGM-65H. In essence, they'd take the only piece that's really worth anything – the aluminum airframe – and use that in their new-build production.

In making the offer, Kuller risked cutting off Raytheon's only supplier. "The Air Force had not totally committed to this idea – there were a few sleepless nights on my part. Had I done the right thing?"

Kuller notes that the program encountered several delays, "But once Greg [Kuntz] came on board as the government 65H DSM, he had a single focus: Before his retirement, he was going to ensure that Siefke's initial efforts in 'getting the ball rolling' were carried through to completion of the final Maverick Airframe Exchange Agreement."

Figure 1. Other Maverick Missile Variants — 1972 to 1998

AGM-65B	"Scene Mag" seeker-improved optics; refined target acquisition capability; increased single-pass kill probability.	13,579
AGM-65C	USAF laser missile.	Not put into production
AGM-65D	World's first operational imaging infrared (I^2R) missile, designed to meet Air Force's requirement for a night precision strike weapon with adverse weather and night operations capability.	10,943
AGM-65E	U.S. Navy laser-guided missile, first variant with 300-lb. Maverick Alternate Warhead (MAW) with selectable fusing. Increased effectiveness against high-value targets.	2,165
AGM-65F	Refinements in the I^2R seeker, guidance processor, and system software; added ship attack mode for tactical operations at sea and included heavy-weight warhead.	1,732
AGM-65G	Added system software to give Air Force capability of attacking an expanded spectrum of land and sea targets. Optimized use against high-value targets.	10,414
AGM-65H/K	Upgraded Guidance Unit with Charge Coupled Device (CCD) technology; clearer picture, longer standoff range, haze penetration; enhanced tracking software. Guidance Unit mounts on either airframe with shaped-charge warhead (65H model) or with the heavy-weight warhead (65K model). Completed operational testing.	35 "R&M 2000" units built; 1,200 GCSs initial production.

Kuntz, for his part, knew that the Air Force had about 8,000 AGM-65A TV-guided missiles in "deep storage" that were no longer capable of economically performing their intended mission. He also was fairly certain that the airframes of those never-used Mavericks were in pristine condition. And from his vantage point, that looked like a steady, reliable supply of airframes for the near future.

Raytheon, in June 1997 sent a letter to the Commander, Aeronautical Systems Center, proposing the Maverick Missile Exchange Agreement. By mid-December 1997, the General Services Administration (GSA) had signed off on the agreement – largely due to the incredible level of defense-industry cooperation; and superior technical, financial, and systems management skills of the Maverick Airframe Team.

Says Kuntz, "After all was said and done, in essence the U.S. Air Force entered into a 'strategic supplier' arrangement with Raytheon to supply AGM-65A airframes for all future Maverick production."

Demilitarization — What's Left?

Kuntz explains that the "A" Mavericks currently maintained in deep storage are not periodically tested, and are slated for eventual demilitarization [destruction]. This is a costly process, he notes, whereby the various subsystems are dismantled and the components disposed of in accordance with federal and state regulations.

Elaborating on that process, Glenn Kuller puts it this way: "Basically, you end up with a warhead, fuse, and a rocket motor. Chemicals, particularly rocket motors and warheads, are destroyed by the Army; and metal parts are rendered militarily useless and sold by the pound as scrap." (At the going rate for aluminum, Kuller points out that the airframe, if sold by the pound as scrap, is worth only about $57.)

Raytheon's shaped-charge warhead manufacturing team is currently working with the Air Force trying to reclaim some metal parts during the warhead

demilitarization process. Kuller explains the process in layman's terms: "Essentially, we take the lid off the warhead, remove the warhead closure, and then heat and remove the existing explosive. After steam cleaning all the metal parts, we mix a new batch of explosives and vacuum-pour the new mixture into the warhead case. The reclaimed explosive," says Kuller, "is then recycled for sale as a commercial product."

The rocket motor, according to Kuller, is also a candidate for reclamation. Raytheon and the Air Force are investigating a similar approach for the AGM-65A rocket motor, whereby a Raytheon supplier would accept the motors for demilitarization. During that demilitarization process, the supplier would reclaim the nozzle portion of the assembly. This proposal, Kuller notes, is in the midst of technical evaluation to ensure the nozzle can, in fact, be reused.

He goes on to say that Hill AFB also has plans to use several dozen of the AGM-65A batteries for aging and surveillance purposes. A series of tests will be conducted at a variety of temperatures to verify that the current and voltage characteristics of the thermal battery are within specification. Kuller states that, historically Maverick has used batteries for aging and surveillance testing that were removed from supply stock. The demilitarization process, however, offers an opportunity for the Air Force and Raytheon to assess batteries that have been in a wide variety of missile storage conditions.

Commonality, Acceptance, Stable Pricing

Gary Card, Hill AFB Maverick Systems Engineer, speaks of the innovative nature of the Airframe Exchange. "The concept was certainly something to think about, but the way programs in the past have occurred, you normally don't go back and revitalize a lot of old systems. If you've got the money to pay for new systems, you use new money."

Card readily admits his surprise at the willingness of the Department of Defense community to accept the role of revitalizing a weapons system in this manner, and states that he thinks it's a good idea. "When Congress basically said, '[You] have no money,' and we knew of the great need the user has for the 65H missile to replace the old vidicon guidance program, it just made a lot of sense to try to continue on and develop a system that was still a viable, television-guided system that the user definitely wants, and at as low a cost as possible."

He attributes some of the success of the Exchange Agreement to the commonality of the center aft section of the Maverick family of weapons concept (Figure 3). This allowed different guidance units and control sections to be mated to the same airframe configuration. "Fortunately," says Card, "the system was developed with the concept of easily removing and replacing the guidance units, resulting in a very flexible core application in other areas for future applications."

Overall, this arrangement appeared to make sense to the government, Maverick buyers, and Raytheon. Once the numbers were agreed upon, it became clear that instead of the taxpayers paying nearly $1 million to demilitarize 1,000 AGM-65A missiles, Raytheon would buy the missiles for $2 million and convert the older airframes for use in current missile production. The net savings to the U.S. taxpayers was $3 million, $2 million of which is assigned as a credit for like Maverick hardware purchases (in this case the 65H). From any angle, this looked like a "win-win" situation for all parties.

The bartering arrangement, according to General Services Administration (GSA) regulations, had to be a hardware-for-hardware exchange; that is, the Air Force couldn't give Raytheon hardware in exchange for engineering support work. Therefore, the Air Force would give Raytheon the hardware (AGM-65A airframes), and Raytheon would then deliver hardware by upgrading Maverick "B" guidance units to Maverick "H" guidance units.

Said Kuntz, "Glenn [Kuller] was looking across the needs of all Raytheon's Air Force and FMS customers, trying to make a match, and that drove him to come up with the Airframe Exchange."

Besides being a win-win situation for the government and Raytheon, FMS customers also benefit. It would have been easy for Raytheon to simply develop a new airframe manufacturer and pass on the additional costs of bringing online a new supplier to their FMS [Foreign Military Sales] purchasers. However, FMS customers will now reap the benefit of stable pricing for the airframe.

Kuller notes that in the past a small Maverick order could result in high airframe costs. That will no longer be the case. He also points out that *only pristine missiles are being accepted for FMS sales.* Raytheon is refusing any missiles that have been out of deep storage, such as captive-carry missiles. "To date," says Kuller, "of 480 missiles inspected, 30 have been rejected – 29 showing signs of being captive-carried and one with a bent fin. Even though these missiles would likely have yielded good airframes, why bother. We have 8,000 to choose from, so there is no problem with getting 30 replacement units."

Like New — Nothing Less Will Do

Before the government and Raytheon could execute the Exchange Agreement, they had to first assess the condition of the AGM-65A's in deep storage. Were the airframes in "like new" condition? Could they meet the definition of GSA's "New Materials" clause?

Ben Harris, the Maverick System Program Director at Hill AFB, Utah, was determined to facilitate that process. Harris explains that his office at Hill manages all models of the Maverick that are in the sustained part of their life cycle, all FMS sales and contracts, and any issues associated with support of weapons in the field.

He notes that Eglin AFB, Fla., however, is the Maverick development agent. All of the new systems and technologies are developed at Eglin. Once they're fully mature, they transition to Hill AFB.

RETRIEVING THE AIRFRAME

FROM DEEP STORAGE TO S

Step 1. AGM-65A's are removed from "deep storage" at the Red River storage facility and shipped to Raytheon Missile Systems for disassembly. The Maverick missile is composed of three major sections: the guidance and control section (left), airframe section (center), and the hydraulic actuation system (HAS) section (right).

Step 2. Key Maverick Airframe Exchange team members inspecting an all up-round missile. Only missiles that pass a series of inspection points are selected for disassembly. To date, of the 487 missiles inducted, 30 have been rejected for having been captive-carried or, in one case, dropped. Pictured from left: Retired Air Force Lt. Col. Greg Kuntz, former Maverick Development System Manager; Marc Trinklein, Maverick AGM-65K Development System Manager; Glenn Kuller, Air-Launched Strike Director, Raytheon; Steve Roberts, Project Engineer.

Step 3. The Guidance and Control Section (GCS) units are removed and sold as scrap. A dealer purchases the GCSs by the pound and melts them down in order to separate various metals. The remaining "slag" is poured into ingots and sold to specialty metals houses, which further separate the various metals.

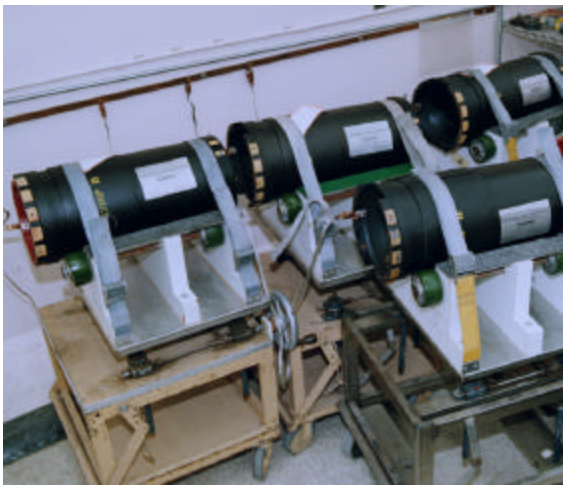
Step 4. The shaped charge warheads, fuses, thermal batteries and rocket motors are removed and packed for shipment to a government disposal facility.

1A. CONTAINERIZED MAVERICK AGM-65A'S.

1B. MAVERICK AGM-65A

2

3



4A. SHAPED-CHARGE WARHEADS

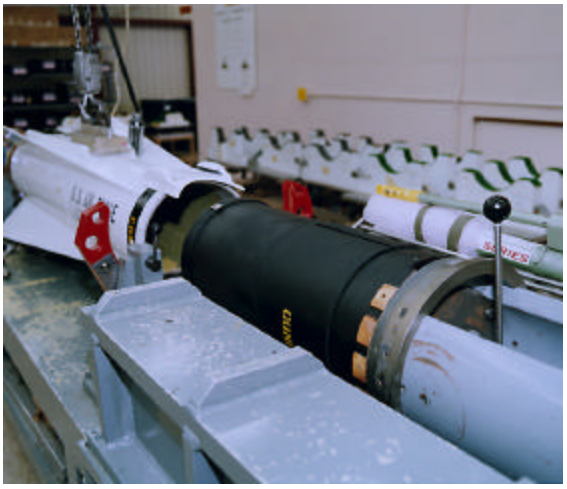
4B. FUSES

Photos courtesy Raytheon Missile Systems Company

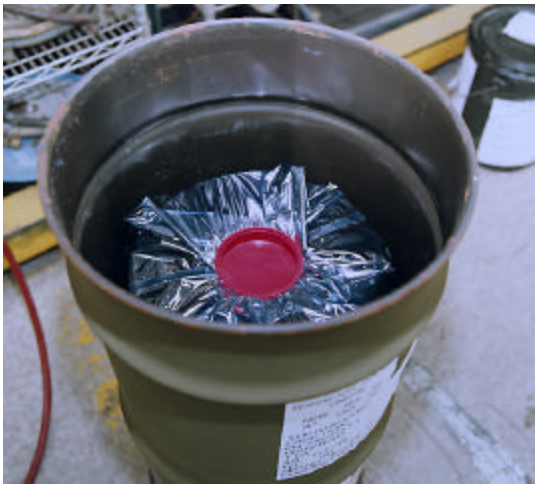
E — MAVERICK AGM-65A

STRIPDOWN TO NEW AIRFRAME

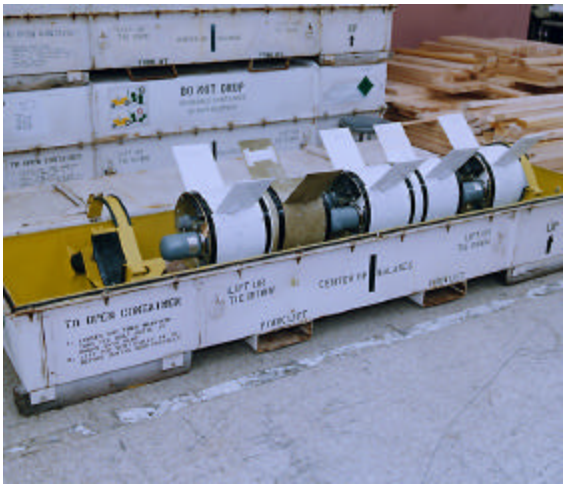
4C. ROCKET MOTORS



5A. WARHEAD WITH FUSE WELL COVER PLATE INTACT



5B. WARHEAD REMOVAL



6. HYDRAULIC ACTUATION SYSTEMS

7

8

Step 5. Raytheon and the warhead supplier (HiTech) demonstrated their ability to reclaim various metal parts from the shaped-charge warhead. The original warheads have their fuse well cover plates removed. The warhead case and explosive are slowly heated until the Composition B explosive is released from the case. The residual Composition B is then used in commercial grade explosives. The warhead case is then steam-cleaned, inspected for reuse, and a new mix of Composition B is vacuum-poured.

Step 6. The Hydraulic Actuation Systems (HAS) are also sold as scrap. They are shipped to Raytheon's property disposal, four at a time, in the original AGM-65A missile container.

Step 7. The airframe is stripped of its earlier primer and top coats and inspected for any corrosion. To date, no underlying corrosion has been found. A powder paint coat is sprayed on the airframe, which is then heated to cure the coating.

Step 8. Before and After. On the left is the reclaimed, "like new" Maverick AGM-65A airframe.

Figure 2. Maverick Timeline

Milestone Event	Date
209 Contract Award	January 1997
RFP to Supplier	March 1997
Supplier's Decision to Stop Manufacturing Airframes	April 1997
Hughes' Offer to 'Purchase' 65A Missiles	June 1997
Six AGM-65A Missiles Dissassembled for Analysis	June 1997
Requested Waiver for Equipment on MTL	August 1997
GSA Approval	December 1997
Release of 'A' Missiles by AF/XORBP	January 1998
Exchange Agreement	January 1998
First AGM-65A Missiles Disassembled	January 1998
First AGM-65G TGMs Delivered	September 1998

Speaking of the Exchange Agreement, Harris said, "Once it was explained to me what they [Maverick Airframe Team] were trying to do with this original Airframe Exchange program, our folks at Hill worked to have six of the 'A' model missiles released from storage and then analyzed to ensure that they were indeed suitable for use in new production."

He went on to say that release of the missiles was not a simple process. "A lot of people had a lot of questions because the exchange was a new concept to them – and something that's not really thoroughly covered in the regulations. But we had some forward-thinking people in the office, we worked well with Greg's group, and we got it done."

Gary Card, the Hill AFB Chief Maverick Engineer, has total system responsibility as the manager for transitioning Mavericks to sustainment-type activities.

"We always have a great deal of interest in aging and surveillance of the Maverick assets," says Card. "And we've always recognized there was quite an arsenal out there that was aging, particularly the AGM-65A's, some of them in excess of 20 years old."

Card said that generally speaking, the AGM-65A is hardware that has been put on a shelf, maintained, and well kept. "There's no reason," he points out, "why you can't reuse the airframe."

Ben Harris and Gary Card readily admit that the bartering arrangement was, at first, a hard concept to accept since it went against everything they had always been taught as far as in the contracting field. They emphasize that they're not opposed to it, but characterize it as "a bit of a culture shock."

"There's a certification process that the contractor is required to go through to ensure that the airframes do meet the definition – the FAR definitions and the FAR clause provisions – of 'new material.' As long as they're meeting the terms of the contract," says Harris, "and the FMS countries are getting a good product, that's my main concern."

Tests and More Tests

Dean Nelson, Raytheon's Production Lead, received the stored missiles and was in charge of putting them through a variety of corrosion analyses. "The Air Force had about 8,000 old AGM-65A TV-version missiles that were headed to the scrap barrel for demilitarization. So we said we'd like to select half a dozen missiles – some of the oldest, even some that had been shipped overseas. We really tried to get a good mix of what had been out there for 20 years. In other words, we wanted a worst-case representative six."

The object in selecting missiles exposed to varying climates and environments, according to Nelson, was to ensure that the Maverick Airframe Team did not use missiles for their analyses that included only those that had gone directly to a bunker and sat on a shelf other than to be taken out and periodically tested.

With local Defense Contract Management Command and Hill AFB representatives present, Raytheon stripped the missiles down to the bare airframes and set about determining which two of the six were in the worst condition. "Actually," says Nelson, "it was kind of hard to spot because we were all shocked at what excellent condition those missiles were in. They were in outstanding, absolutely pristine condition!"

Two of the missiles ended up being cross-sectioned in Raytheon's Components and Materials Lab where Raytheon technicians went into the areas of the airframes probably most susceptible to deterioration or corrosion.

The bottom line – they found absolutely nothing that would indicate deterioration or corrosion. Said Nelson, "These were as good as new. In fact, we used to also do an undercoating on the inside of the airframe, not just the outside, probably 10 or 12 years ago. There was an engineering change that said, 'No, you don't have to put a preventive rust coat on the inside of the frame.' So these older airframes do have extra protection in that way.

"Some might even venture to say," Nelson offered, "that they're slightly better than the ones that we've built in the last 10 or 12 years." All in all, everyone associated with the analyses felt that the Maverick AGM-65A was a good missile, stored in an air-tight container, and Air

Force personnel had maintained them according to the Tech Orders.

However, the government and Raytheon did not rely on Raytheon's analyses alone. As a cross-check, they split the sample cutouts in half and sent them to Hill AFB Lab, where Hill's technicians also analyzed the airframes for corrosion and deterioration. Performing the same tests, Hill's technicians achieved the same results – that the airframes were in absolutely "like new" condition.

GSA a Key Player

The GSA is responsible for the resale of government property, and a number of regulations cover the exchange of hardware. As discussed earlier, the team knew the exchange must be "similar" and must be conducted on a "one-for-one" basis.

In addition, missiles are currently excluded from resale to companies and must be destroyed after their useful life. Identifying the major issues and beginning discussions with GSA for the necessary waivers quickly became one of the team's top priorities. Coordinating the waivers was a major effort by Becky Kirk, the Maverick Airframe Team's contracting officer at that time.

Says Ben Harris, "Once the analyses were done, that paved the way for Greg's group to complete the work with the GSA waiver and finish the Exchange MOA [Memorandum of Agreement]. Although we played a small supporting role to Greg's team in the Exchange Agreement, in terms of the effort involved, the lion's share of the real negotiation was done by Eglin."

Dean Nelson also spoke of GSA's certification process. "As a taxpayer, I like this arrangement because we're re-using some components and saving some monies that revert back to our customer; hopefully, our efforts will allow us to sell a missile for a little less. Also, by re-processing some of these parts, we have reduced the cost of demilitarization of these missiles – costs borne by you and me, the taxpayers. I think it really is a significant win-win situation for everybody."

Ben Harris agrees. "I think there's a valuable lesson here for other program managers of aircraft weapons systems or other missiles that are aging. They could probably use this concept in their programs as well.

"However," he cautions, "You've got to be able to back up what you do. Coordination and communication, achieving buy-in from all the stakeholders will be the biggest challenge. But once that's done, you press on and get the job accomplished."

Determining the Value

Harris notes that he often speaks to other program managers or members of the acquisition community; they're always interested in how the Maverick Airframe Team determined the value of the airframes, and invariably ask how to go about determining the value for their own programs.

Harris speaks of the tremendous amount of work involved in assessing value. "There were a lot of meetings and many different means of assessing the value of the airframes, a lot of different ways you could approach it; sometimes it seemed as though we looked at all of them. And it took a lot of time and discussion to work that out, but it was worth it." He states that "Determining the value of the asset you're turning in is definitely the key to the whole Airframe Exchange."

Worth the Effort

Greg Kuntz is quick to acknowledge he had a lot of good help in bringing the Exchange Agreement to the table. And both Greg Kuntz and Glenn Kuller stress that without the tremendous efforts of everyone on the Maverick Airframe Team, there would still be no Maverick Missile Exchange Agreement.

MAVERICK AIRFRAME EXCHANGE TEAM

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Maverick System Program Manager

Lt. Col. Greg Kuntz, U.S. Air Force
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Defense Contract Audit Agency

Ron Stenstrom
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Keith Sweatland
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David Taft
Raytheon Missile Systems Company

Marc Trinklein
Eglin AFB

Wayne Warner
Eglin AFB

Scott Zibrat
Raytheon Missile Systems Company

"Basically," says Kuntz, "we had six to 10 people in a room. And collectively we kept coming up with better ideas and better ways of doing the exchange, better ways to make it happen."

"The people that worked on the program – the entire team – literally took the bull by the horns, and without a whole lot of "Mother-May-I's" went out and made this thing happen."

Says Gary Card, Hill AFB Maverick Chief Engineer, "I think the airframe is a prime example of the way of the future. I think with the scarcity of funds, that we should be looking at more systems and ways that we can economize and develop improved capabilities without the high cost of original development.

"It's always nice to get a new system out there," Card continues, "but when you have a good viable system it always has made sense to me to try to salvage the value you already have there. It's very frustrating to think that we have about 13,000 AGM-65A's and B's out there that probably will just go to the scrap yard if they are not utilized. This is a great way to increase efficiency – utilizing the assets you already have in place."

According to Lt. Gen. George K. Muellner, Principal Deputy, Assistant Secretary of the Air Force (Acquisition), "This Exchange Agreement is a great example of outstanding leadership and teamwork. It is a benchmark whereby future bartering arrangements will be judged. You have laid the groundwork for similar arrangements in the future..."

Darleen A. Druyun, Principal Deputy Assistant Secretary of the Air Force (Acquisition & Management) comments, "Too often I encounter program managers who think Acquisition Reform can only happen at the earliest stages of a program's life cycle...your approach epitomizes the precepts of Acquisition Reform."

The team's success in managing risk and accelerating the pace of the Airframe Exchange Agreement through the use of sound Acquisition Reform principles and strategies, is directly reflected in its ambitious milestones (Figure 2). From the time Kuntz and the Maverick Airframe Team agreed on the numbers, got the AGM-65A's out of storage at Hill AFB, Utah, and had them at the gate waiting to be delivered to Raytheon for analyses was *less than 21 days.*

They're Not Through Yet

The Maverick Airframe Team is not stopping with their first successful venture. Currently, they're concluding another cost-reduction effort with upgrade of the electro-optical seeker for the AGM-65 Maverick.

Led by Marc Trinklein, Eglin's new 65K DSM, the AGM-65K upgrade program will exchange between 1,200 and 2,000 AGM-65G missiles built since Desert Storm, thereby generating the necessary funds to upgrade TV Guidance Control Systems (GCS) with charge coupled device (CCD) technology. (This exchange will be the subject of a future article in *Program Manager* magazine.)

Author's Note: As part of my research for this article, I visited the Raytheon plant in Tucson, Ariz., and saw first-hand an AGM-65A recently removed from deep storage, still in its shipping crate. Although many years had passed, the missile was new, "not even a speck of dust," I commented at the time.

Air Force Lt. Col. Greg Kuntz retired from active duty in July 1998. Currently, he is the Director of Air Ranges at Comptek Defense Systems, Buffalo, N.Y.

Those interested in further information on the Airframe Exchange Agreement are encouraged to E-mail any of the following Maverick team members:

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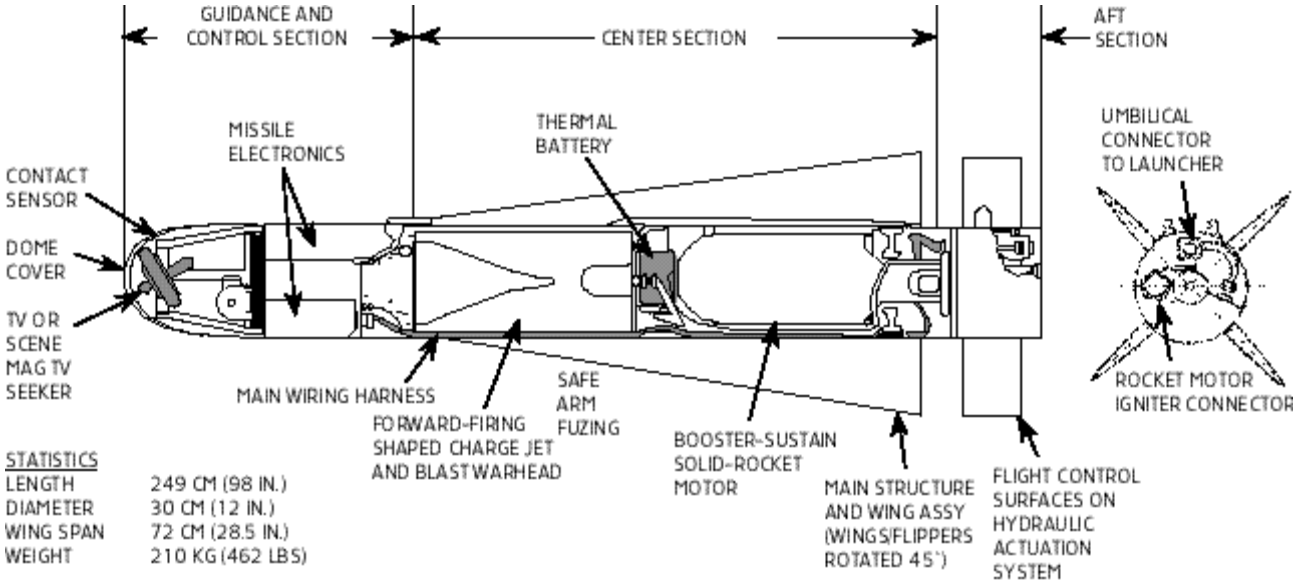
wgkuller@west.raytheon.com
gkuntz@comptek.com

FIGURE 3. Maverick Missile Arrangement



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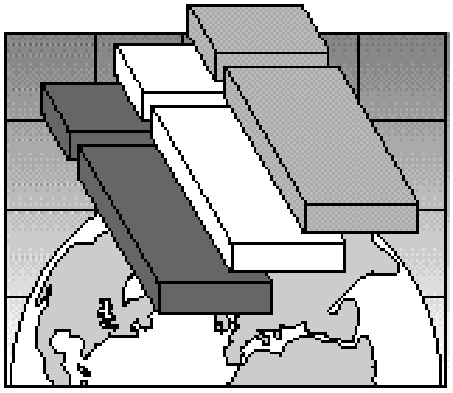

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9. Limit your paper to *15 pages*.

THE WHITE HOUSE

Office of the Press Secretary
(Chicago, Illinois)

President Clinton Welcomes Plan to Strengthen U.S. Leadership in Information Technology

A report released today by the President's Information Technology Advisory Committee (PITAC), whose membership includes many of the nation's top computing and communications experts, sets out a bold agenda for ensuring America's leadership in the Information Age by expanding government investments in long-term research and development in technologies such as computers, networks, and software. Such investments drive economic growth, generate new knowledge, create new jobs, build new industries, ensure our national security, protect the environment, and improve the health and quality of life for our people.

In accepting this report, President Clinton thanked the Committee in a letter for their work in developing a research agenda for the Nation, and renewed his commitment to make significant increases in computing and communications research in the years ahead. "Our nation's economic future and the welfare of our citizens depend on continued advances and innovation in the information technologies which have produced so many remarkable developments in science, engineering, medicine, business, and education," the President said.

Vice President Gore, author of the High Performance Computing Act of 1991 and long-time supporter of the "information superhighway," also voiced his support of research in information technology. "Information technology can be a powerful tool for achieving many of our most important national objectives," the Vice President said, "such as creating jobs and growing our economy, providing our children with a world-class education, expanding access to high-quality health care in rural America, and strengthening our national security."

The PITAC report notes that the growth in today's information technology (IT) sector is leading the growth of all other sectors of the economy. The Federal Reserve reports that during the past five years production in computers, semiconductors, and communications equipment quadrupled at a time when total industrial production grew by 28 percent. These three industries account for one-third of the total growth in production since 1992. As we approach the 21st century, the opportunities for innovation in IT are larger than they ever have been – and more important.

During his June 1998 commencement address at the Massachusetts Institute of Technology, the President asked Dr. Neal Lane, his new science advisor, to prepare a detailed plan on computing and communications research. He has directed Dr. Lane to work with our nation's scientific community and to carefully consider the new research directions identified in the Committee's report.

The Committee stressed the importance of Clinton Administration initiatives in computing and communications such as the Next Generation Internet, the Department of Energy's DOE 2000 distributed computing program, and the National Science Foundation's Knowledge and Distributed Intelligence emphasis. This year, President Clinton has proposed record increases for civilian research and development to keep America at the cutting-edge of science and technology.

FOR IMMEDIATE RELEASE August 10, 1998

Recognizing the critical role that Federal research has played in developing modern computing, the Internet, and other Information Age technologies, the Committee urged the President to ensure that this momentum is maintained. The Committee argued for sharply increased support for basic research, giving highest priority to research on computer software. They also stressed the importance of allowing the research community to "live in the future" and tackle long-term, high-risk research challenges.

Specifically, the Committee recommend[ed] emphasis be placed on:

- Techniques for developing software that is more dependable and reliable;
- Communication systems which will be able to support billions of users and devices that are attached to the network;
- High-speed computers and software that can deliver useful performance that is a thousand times faster than today's most powerful supercomputers; and
- Research that ensures that America's workforce is properly prepared for the challenges and opportunities of the Information Age.

In responding to the President's direction, Dr. Lane said "I concur with the Committee's conclusion that research in computing and communications merits expanded support and is as important to America's position of leadership in the 21st century as any area of research. We must rededicate ourselves to cutting-edge R&D in information technology, or other nations could pass us by, and that is a risk the United States cannot afford. Breathtaking advances in information technologies mean, however, that research priorities need to be redefined to take advantage of new opportunities. The PITAC report will provide Federal agencies with a compelling set of research goals which will provide valuable guidance as they prepare plans for our year 2000 budget."

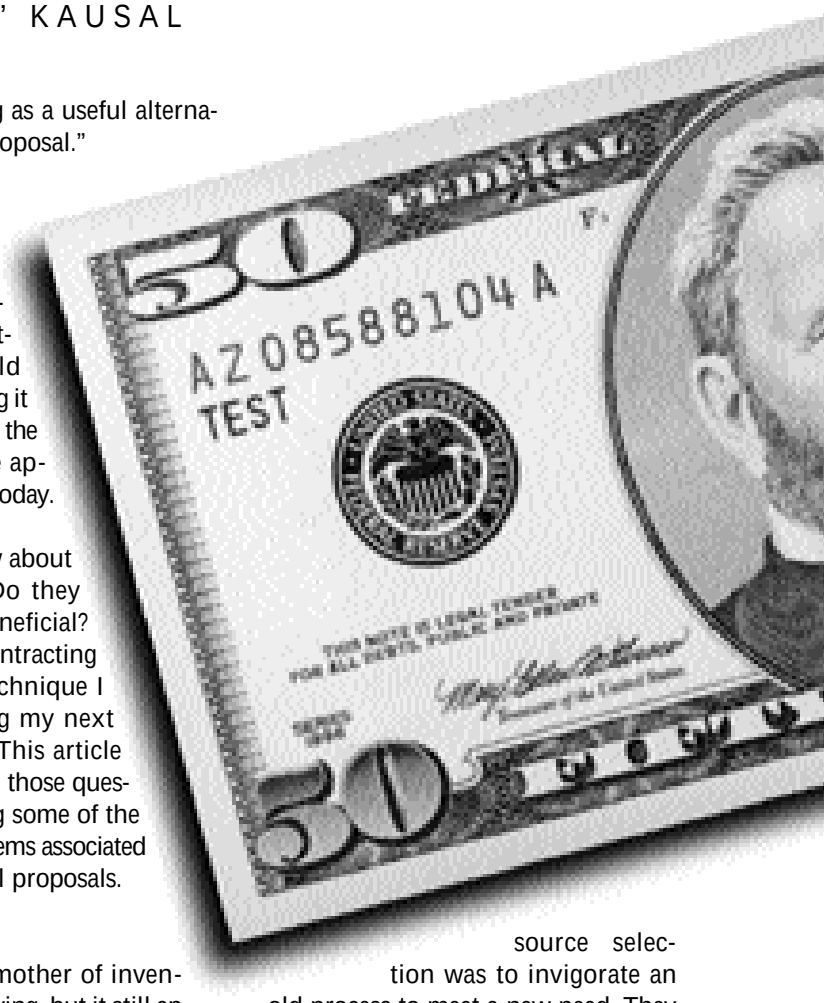
A copy of the Committee's report is available on the World Wide Web at http://www.ccic.gov.

Editor's Note: This information is in the public domain at http://www.npr.gov/library/news on the Internet.

Thoughts on Oral Proposals

Dusting Off an Old Technique

B.A. "TONY" KAUSAL



It was the last week of school. The rewards of three years of sweat and long hours – my degree – all hinged on how well I did on my "Orals." In preparation, I spent several weeks rereading old notes, glancing through text books, and finding grads who had already been through the pain and agony of Orals.

Universities have long used Orals as the final examination in which questions and answers are all spoken orally. As with written exams, Orals are administered with the intent of determining whether or not students really understand what they have learned. In the world of Acquisition Reform, this practice also finds favor with many acquisition professionals.

Secretary of Defense William S. Cohen's "Revolution in the Department's Business Practices" poses a clear mandate to seek innovative approaches and try untraditional methods. Clearly, today's era of reforming the government's acquisition business practices and processes encourages the creation of new streamlining techniques.

In government-defense industry contracting, our traditional exam (for source selection) has typically been a written exam administered in the form of "The Proposal." This voluminous government-mandated, contractor-prepared document in which program managers (PM) spell out their answers to our requirements – often in hundreds of thousands of words that more often than not, fail to communicate – is undergoing profound change. One of many new techniques is emerging as a useful alternative – "The Oral Proposal."

In the past, when PMs used the oral proposal, its use was rare and narrowly applied. Dusting off this old technique and using it in new ways typifies the kind of innovative approach being used today.

But what is so new about oral proposals? Do they work? Are they beneficial? And, as a PM or contracting officer, is this a technique I want to try during my next source selection? This article attempts to answer those questions by examining some of the practices and problems associated with the use of oral proposals.

Necessity

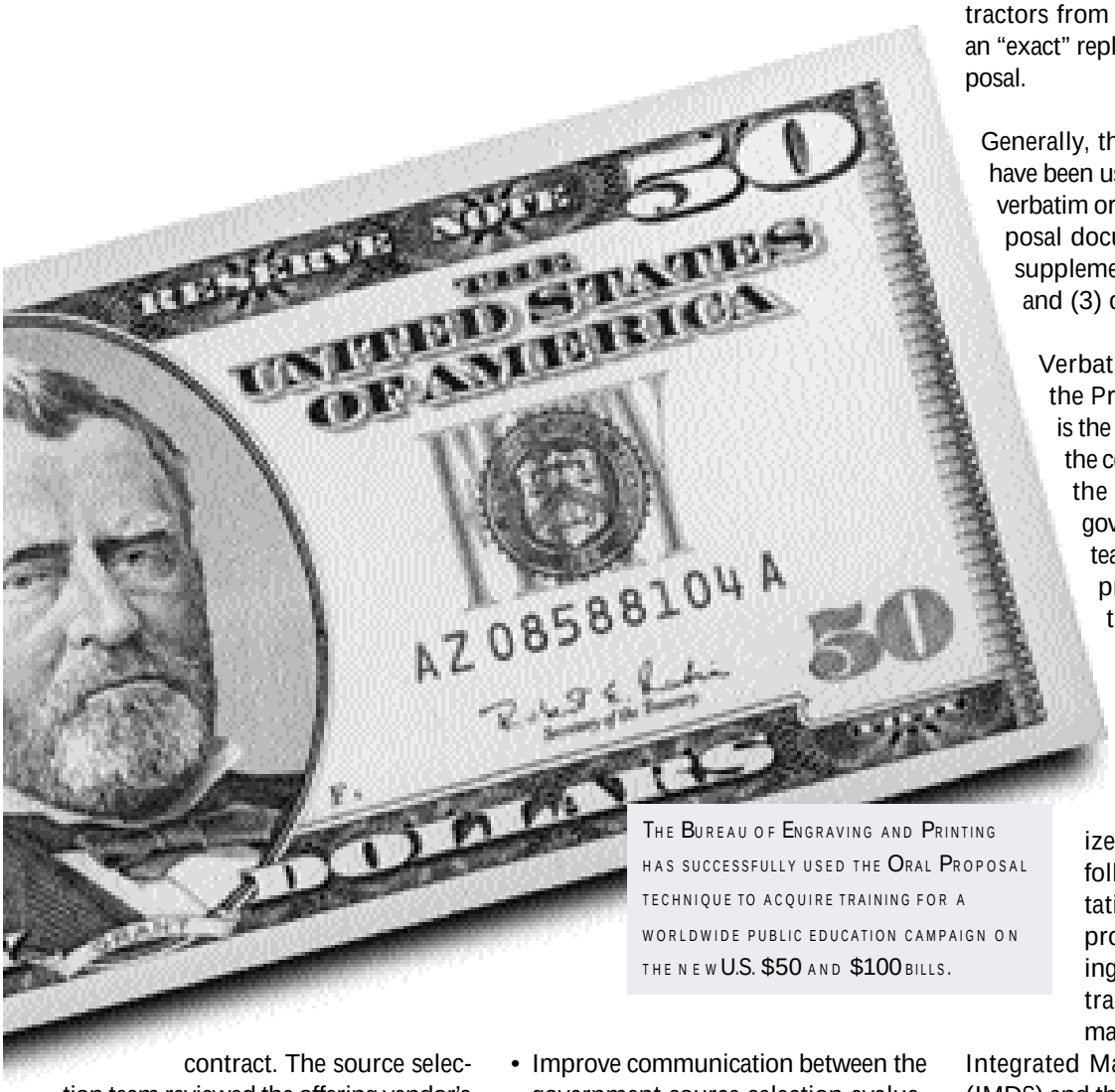
"Necessity is the mother of invention." It's an old saying, but it still applies today. Consider, for example, the problem faced by Linda Barnard, Contracting Officer for the Space Base Infrared Systems Program.

"We were faced with a difficult situation," Barnard observed. "We needed to award a contract within six months. By the traditional process, we could not make it."

After discussions with several senior acquisition experts, Barnard and the program office reached the conclusion that one way to speed up the process and the source selection was to invigorate an old process to meet a new need. They replaced a written technical volume with a novel innovation – an oral proposal.

Selecting a winning contractor based on proven capability, one who would work closely with the program office after contract award to ensure the best possible support to the customer, was the team's overall goal. To begin, the contractor's team was still required to prepare a written proposal containing a short executive summary with resumes, past performance information, a small cost volume, and the completed model

Kausal is the Air Force Chair, DSMC Executive Institute.



THE BUREAU OF ENGRAVING AND PRINTING HAS SUCCESSFULLY USED THE ORAL PROPOSAL TECHNIQUE TO ACQUIRE TRAINING FOR A WORLDWIDE PUBLIC EDUCATION CAMPAIGN ON THE NEW U.S. $50 AND $100 BILLS.

contract. The source selection team reviewed the offering vendor's key resumes and past performance records, then annotated a pre-prepared key criteria checklist in preparation for the oral presentation.

The offeror's source selection team was then allocated two-and-a-half hours to present their technical approach. Ultimately, this streamlined approach saved government and industry time, money, and resources. The results speak for themselves – the program office awarded on time.

Benefit

Why oral proposals? Why is it the latest acquisition technique to enjoy popularity? Well, the theory behind the use of oral proposals is that they would:

- Be executed faster than traditional written proposals.
- Improve communication between the government source selection evaluators and the proposing contractors.
- Facilitate the exchange of information during the proposal period.
- Reduce government and contractor's costs.

By that same logic, these factors should also lead to increased competition among offerors and increase the probability that only the best contractor would be selected. Source selection teams would have more pertinent information, and thus be able to make a better assessment of the contractor's team and its proposed technical and management effort.

Types of Oral Proposals

In the past, government rarely asked contractors to present oral proposals. Even when they did so, government-mandated restrictions precluded contractors from presenting anything but an "exact" replication of the written proposal.

Generally, three different approaches have been used for oral proposals: (1) verbatim oral presentation of the proposal document; (2) oral proposal supplemental to written proposal; and (3) oral proposal only.

Verbatim Oral Presentation of the Proposal Document.[1] This is the traditional approach, with the contractors simply briefing the written proposal to the government source selection team. Though it appears to provide better insight into the written proposal, it does not offer any new or clarifying information.

Oral Proposal Supplemental to Written Proposal. Characterized by a written proposal followed by an oral presentation, this second method provides for new or clarifying information on the contractor's technical or management approach. The Integrated Maintenance Data System (IMDS) and the Joint Simulation System (JSIMS) are prime examples.

In each of these acquisitions, the government required that contractors submit the normal written proposal and an oral presentation. Since the government planned to use commercial off-the-shelf technology for these systems, the source selection process included "live" demonstrations of techniques and initiatives considered critical to the final selection.

Under the new Federal Acquisition Regulation (FAR) Part 15 guidelines, the "revision to your written proposal" is now inappropriate since, once an offeror changes a proposal, discussions are deemed to have taken place. This mandates opening of negotiations with all offerors and prevents award without discussions or a competitive range

Photo courtesy Bureau of Engraving & Printing

determination. If necessary, a competitive range determination could be made after negotiations.

Oral-Only Proposal. The third method requires no written proposal from the contractor; however, the offeror's briefing charts could serve as documentation of the proposal.

The Joint Air-to-Surface Standoff Missile (JASSM) program came the closest to an oral-only proposal. This method required that each contractor:

- Prepare a five-hour video with 100 viewgraphs (these prepared materials became part of the proposal).
- Submit a System Performance Specification, Integrated Master Plan, and Integrated Master Schedule.
- Submit affordability and past performance information.
- Submit a 10-page cost proposal.

The Process

So, let's suppose I want to use oral proposals! What do I have to do? First, a program office needs to ask the question: Is my acquisition best suited to oral proposals?

Only you can decide. Where you have more complex issues and problems, and where open communication between the government and industry can enhance the quality of proposals and foster a "best-value" approach, then an oral proposal may be a useful technique.

The Request for Proposal (RFP) is the vehicle to use for communicating government requirements for an oral proposal.[2] Section L of the RFP, Instructions to Offerors, provides a description of the information the program office needs to select the best contractor.

These requirements should cover the traditional topics, such as technical approaches, management experience, and past performance. Section L should also provide detailed information on the amount of time allowed for the briefing, the format and location of the briefing, and the number and types of personnel to be involved.

The contractor will also need information on the amount of interaction that will be allowed between the contractor's team and the government evaluators. Will it be a free and open discussion, or will the government be in a receive-only mode? If a recording of the briefing is to be made, the RFP should specify whether the offeror or the government will be responsible.

Do not limit yourself. The term oral proposal does not have to be restricted to briefings only. It can also include tours of plants and demonstrations or presentations of the contractor's products or processes. The purpose behind the oral proposal is to improve communication, and these additional onsite events can provide better insight into the contractor's ability to successfully perform the contract effort.

Have They Worked?

"The use of the oral proposal has been outstanding," said Stephen Meehan, Contracting Officer for the MIS program. "It helped communication between the contractors proposing on the IMDS and JSIMS programs and the government evaluators. It provided a better understanding of the key contractor personnel and their experience."

Other agencies such as the Bureau of Engraving and Printing (BEP) have successfully used this technique to acquire training for a worldwide public education campaign on the new U.S. $50 and $100 bills.

"The use of oral proposal," the BEP reports, "clearly demonstrated the ability to evaluate technically superior offers while significantly reducing procurement lead time and administrative cost."

The BEP found they reduced the proposal preparation time by 70 percent (to 55 days) and administratively saved the government $58,000. The BEP also estimates that the contractor saved over $600,000 in proposal preparation costs.[3]

The consensus of the contractors involved in the IMDS debriefings was that they "...endorsed oral proposals as an excellent method to get depth of insight about the proposed technical and management approach, in addition to a first-hand evaluation of key members of the bidding team."[4]

At the last DoD Director of Defense Procurement Conference, many of the participants indicated that they favored the use of oral proposals.

"The oral proposal provides a mutual advantage to both parties. The government gets to see the contractor's quality people," said Fred Cipriano, vice-president for Booz-Allen and Hamilton. However, he did warn against placing arbitrary RFP limits on the presentation time and formats of an oral proposal. The government needs to allow enough time for the contractors to adequately explain their plan to accomplish the contract.

General Services Administration's Bill Gormley also recommends "encouraging oral presentations since they take down any barriers that exist between the government and contractor."

What About Lessons Learned?

As might be expected, any "new" technique will require some refinement. The discussion that follows identifies some of the problems and issues encountered by those offices that have used oral proposals.

"Dilbert" or Hollywood?

In the case of one source selection, the contractors were required to videotape their proposal and submit it to the program office. This presented a quandary for the contractor. Do I have "Dilbert" present the proposal or a professional actor? The inclination to "put the best foot forward" won out, and "Dilbert" stayed in his cubicle. This "Hollywood" approach – a five-hour video – was very costly to the contractors. While a professionally prepared video may present a story in a smooth, succinct manner, it allows for no exchange of information.

As you might guess, the government technical evaluators gained very little additional insight into the contractor's proposal. The video was little more than

an augmentation of the 100 viewgraphs provided by the contractors. Thus, it was a loser from both the government's and contractor's perspectives – it cost too much and did not provide the needed exchange of information. The new FAR Part 15 seems to discourage this approach: "Pre-recorded, videotaped presentations that lack real-time interactive dialogue are not considered oral presentations..."

Government Videotaping – Not Such a Bad Idea

If the contractor does not prerecord their own videotape, should the actual presentation be recorded? Most of the people I interviewed felt that there were several advantages to the government team's videotaping the presentation.

First, it provides a record of the proceedings. It captures both the contractor's proposal and the interchange between the source selection team and the contractor. This may be important in defending any source selection team's decision should there be any subsequent legal proceeding. The General Accounting Office (GAO) has indicated that some form of record should be made to allow the GAO to determine whether the source selection decision is rational.

Second, if the program office tapes the event, it will save the contractor money (which we contribute to in independent research and development accounts) and provide a consistency between presentations. This is a case where the government is interested in the content of the presentation versus its "look."

Test Drive the Equipment

On the technical side, good equipment is an absolute necessity. With an oral proposal, the technical evaluators found they needed to run the tape repeatedly to ensure they understood the proposal. A video- or audiotape recorder that provides quality sound or video and that enables the reviewer(s) to stop, rewind, and replay in an easy and efficient manner is essential.

Political Correctness Versus Loss of Privacy

Integrated Product Teams are the current management fad, and one program took this to the extreme. This program integrated a prescribed seating arrangement for the participants – contractor, government, contractor, and others. This proved unworkable because the government evaluators found it difficult to take notes with contractor representatives sitting next to them. Besides, you lose the ability to ask a fellow evaluator – "What did he say?" Flexible seating during the oral presentation (briefing) is important.

One of the hallmarks of Acquisition Reform has been opening up the dialogue between industry and government.

Take a Break

How many oral presentations can a program office evaluate? Some government personnel indicated a concern with the number of contractors making presentations and the government's ability to use oral proposals. Some thought two or three contractors were the maximum amount of proposal presentations that could be evaluated by a team. Others felt they could easily evaluate as many as five or six proposals.

While I can offer no definitive number, my experience in interviewing personnel indicates that, when more than 10-15 people are involved, it becomes very difficult to keep differences among them clear. If you expect more than five or six offerors, it might be prudent to ask for written proposals. After the competitive range determination, oral proposals can then be used to increase the source selection team's understanding of the remaining offerors.

Evaluators Need Time to Prepare

Too often true. Who among us hasn't tried to decipher his own notes and not been able to read them? The program personnel I interviewed all indicated that it was important to structure the briefings to allow enough time for each contractor to make their presentation, but also time for the government evaluators to prepare their evaluations

.

When the briefing goes all day, as it did for one program office, the next day was reserved for the evaluators to meet, finish reviewing their notes, and write up the evaluations. The schedule called for the next contractor to present his oral proposal on the third day, followed by another day of finishing notes and evaluation write-ups. To forget may be routine, but not a smart source selection practice.

Talk, Talk, Talk

One of the hallmarks of Acquisition Reform has been opening up the dialogue between industry and government. Prior to the presentation, it is important to provide directions to the contractor on the type of information needed for the source selection team to evaluate their offer. It helps to be specific and define the information and approach you want.

I would recommend that our wants and desires be discussed with the contractors ahead of time and a "coordinated" approach to the presentation of the proposals be developed.

Keep Your Secrets Secret

What do you do with a classified video? If you require the contractor to prepare a video and classified information is involved, then you need to consider how to handle the videotape.

- How many people will be involved?
- Where are you going to present it?
- How will the video be used during the evaluation?

Developing answers to these questions would be a good topic of discussion dur-

ing the pre-proposal conferences with offerors.

Keep Your Audience Awake
One of the best ways to lose an audience is to read the visuals. The appropriate way is to give the audience time to read each visual and then amplify selected points. This may sound like Briefing 101, but it still needs to be stressed since some people have never taken 101.

The purpose of an oral briefing is to enhance the communication between government and industry. We need to work with our industry counterparts to make sure we don't have contractor personnel just talking to the viewgraphs.

Get Real
The government wants "real people" (engineers, program managers, etc.), not actors, to deliver the briefing. Ideally, the team that will manage the program should present the briefing. This helps to provide the government evaluators a better sense of the technical and management approaches the contractor's team will use to execute the program. An interview in person, as opposed to an interview over the phone, will give the source selection team a better "sense" of the contractor's team.

Never Let a Good Idea Go Unpunished
Mandating in the RFP that only "key personnel" can brief doesn't solve all your problems. Another program office put a restriction on who could provide the presentation. Only contractor "key" people (the actual team members) were allowed to brief. To paraphrase an old saying, "Never let a good idea go unpunished." A family emergency arose and the "key" briefer had to be out of town. Yet the RFP mandated that only contractor "key" personnel could brief. The workaround – allow a substitute "key" person to brief.

Practice Makes Perfect
How about having a practice session? Generally, the offeror's proposal preparation team will do several dry runs to make sure they are getting their message across. Why not a practice session with the government? One program office went so far as to try a dry-run presentation by the contractors after release of the draft RFP, but before the formal RFP release. The purpose of this exercise was to ensure that each contractor understood the requirements of the draft RFP and that each contractor provided the necessary data for evaluation purposes.

The program office personnel were careful not to evaluate the quality of the presentation or the contractor's design or approach but to focus on issues such as failure to address the Section L requirements. The program office also indicated whether there was too much marketing and not enough required content. Both the contractor and the program office indicated that a dry run was beneficial and did improve the contractor's proposals.

Task Orders Contracts
Oral proposals seem to be ideal for task orders (ID/IQ) contracts. They can speed up the process for a contractor's preparation of a proposal as well as the government's evaluation of a proposal. Congressional staffers have indicated that, during the drafting of the Federal Acquisition Streamlining Act, they envisioned oral proposals as one of the methods the Services would use to implement the law.

Treat All Contractors Fairly, Not Necessarily the Same

The new FAR Part 15 was rewritten with the goal of simplifying the proposal delivery process and of infusing innovative techniques into the source selection process. In the past, the emphasis has been on treating all contractors exactly the same, which led to less interaction. What's more, this barrier prevented a full discussion of the information contained in the proposal. The current approach is to "treat all contractors fairly and impartially." But they do not all need to be treated exactly the same. An exchange of information should be encouraged.

As Thomas Mann said, "Speech is civilization itself. The word – even the most contradictory word – preserves contact..." Acquisition professionals have recognized the need for improved communication between government and industry. The Acquisition Reform movement has provided vehicles for changes in policy and changes in the techniques. Oral proposals offer the acquisition manager a new technique to more effectively manage the acquisition business.

By the way, remember those dreaded "Orals" I referred to at the beginning of this article? Well, I did pass my Orals – all in all, not a bad way to demonstrate that you know what you know, when you need to know it.

Author's Note: A special thanks to Linda Barnard, Air Force Space and Missiles Systems Center; Steve Meehan, Electronics Systems Center; Jackie Leitzel, JASSM Program Office, Eglin AFB; and Air Force Lt. Col. Ken Truesdale, SAF/AQCF, for sharing with me their invaluable insight, problems encountered, and successes achieved in implementing oral versus written proposals.

For more information on this topic, the Office of Federal Procurement Policy and Department of Energy have posted a very good guide at http://www.pr.doe.gov/oral.html on the Internet.

ENDNOTES

1. The FAR Part 15 rewrite, for the first time, included Oral Presentations. In this article, I have used the term presentation to refer to the *actual presentation.* I have used the term oral proposal to refer to the *actual proposal.*
2. Some portions of the proposal will still need to be in writing. You will need a signed offer sheet, and the certifications and representation will need to be in writing. It may be prudent to have resumes, performance history, contractual commitments, and cost information in writing.
3. Seegars, Carroll L., "Oral Presentations – BEP's Success Story," *CM Magazine* (National Contract Management Association, February 1996), pp. 26-27.
4. IMDS Source Selection Feedback Notes, p. 3.
5. Frient, Ray J. Jr., "Preparing Effective Presentations," Pamphlet, 1971.

OASD PUBLIC AFFAIRS NEWS RELEASE

Secretary of Defense Hosts Oath of Office Ceremony for First Chancellor for Education and Professional Development

At an oath of office ceremony in the Pentagon today, Secretary of Defense William S. Cohen welcomed the selection of Dr. Jerome "Jerry" F. Smith Jr., dean of the Information Resources Management College, as the first Chancellor for Education and Professional Development in the Department of Defense (DoD). This action promotes a key Defense Reform Initiative (DRI) decision to raise the quality of civilian education and professional development to world-class standards.

"The 730,000 civilians who serve DoD form a cadre of unsurpassed talent, expertise, and promise," Cohen said. "The strength of this Department and the security of this nation hinge in no small measure on their ability to realize their full potential. Therefore, it is critical that we provide world-class professional development and education for our employees." Expressing full confidence that the chancellor will be "a vigorous and visionary guiding hand on matters of civilian education," Cohen said Dean Smith "is uniquely suited to lead our civilian education effort.

"This appointment is also another milestone in our Defense Reform Initiative, which has had a very successful first year," Cohen said. "Credit for that belongs to John Hamre, Bill Houley, and the thousands of employees throughout the Department who have contributed their energy and creativity to making DoD a better and more efficient organization."

The chancellor will be the principal advocate for the academic quality and cost-effectiveness of all DoD institutions and programs that provide higher education and professional development for DoD civilians. Programs and institutions whose primary mission is Professional Military Education (PME), such as the National Defense University, the senior Service schools, the command and staff colleges, and the military academies are not, however, included in the chancellor's charter. The chancellor will ensure that the educational policies and requirements set by the functional areas are implemented at the highest possible level of quality, effectiveness, and efficiency. The chancellor's office will be part of the Defense Human Resources Activity, and the chancellor will report to the Deputy Secretary of Defense through the Under Secretary of Defense for Personnel and Readiness. The Office of the Chancellor will have a small, highly qualified staff.

The chancellor's duties include:

- Planning and executing studies and projects, including those concerning the structure of the Office of the Chancellor, associated with the development of standards for quality in civilian education and professional development.
- Establishing measurable quality standards for curricula, faculty, and academic operations of the broad range of institutions and programs for which the chancellor has oversight responsibility and authority.
- Serving as the principal advisor on academic quality, effectiveness, and efficiency to those Under Secretaries and Assistant Secretaries of Defense who sponsor or have functional oversight for education and professional development programs for civilians.
- Serving as the focal point for external accreditation and certification of all covered institutions and programs and serving as the internal certification agent where appropriate.
- Reviewing and approving budgets, high-grade positions and faculty hiring, and academic operations of all covered institutions.

- Rationalizing allocation of resources, including elimination, consolidation, and outsourcing of programs and institutions where appropriate.
- Representing the Department of Defense in meetings with senior officials of higher educational institutions, accrediting bodies, and educationally related executive branch organizations.
- Managing working groups of the DoD components and institutional representatives to develop standards for academic and resource-management quality.
- Overseeing implementation of educational and professional development policies and requirements developed by the Office of the Assistant Secretary of Defense for Force Management Policy and by functional leadership at the Under Secretary and Assistant Secretary of Defense level.
- Undertaking special projects as directed by the Assistant Secretary of Defense for Force Management Policy.

During Fiscal Year 1997, some 55,000 of the DoD's civilian employees received some form of post-secondary education or professional development from a DoD-sponsored institution. In addition, more than 20,000 civilian employees participated in educational and professional development programs in institutions not sponsored by the DoD. In 1997, the DoD spent some $200 million on education and professional development for DoD civilian employees, not including incidental or in-Service training.

Dean Smith graduated from the U.S. Naval Academy in 1961. He earned his masters and his doctorate from Stanford University. After 34 years of commissioned service, he retired from the U.S. Navy in 1995 as a rear admiral, last serving as commandant of the Industrial College of the Armed Forces. Since November 1995, he has served as dean of the Information Resources Management College within the National Defense University.

"Education is a major component of our national security interest."

–Secretary of Defense William S. Cohen
September 12, 1997

Department of Defense Education Facts

The strength of the Department of Defense and the security of this nation hinge on the ability of all DoD employees to realize their full potential. Therefore, it is critical that we provide world-class professional development and education for our employees.

The appointment of an educational chancellor will raise the quality of education and professional development available to DoD civilians to this standard.

DoD Civilians

There are roughly 730,000 DoD civilian employees. In FY 1997, DoD spent approximately $200 million providing post-secondary education and professional development for its civilians, not including incidental or in-Service training.

In FY 1997, as many as 55,000 civilian personnel received some form of post-secondary education or professional development at one of the 25 DoD-sponsored educational institutions.

In addition, more than 20,000 civilian employees participated in educational and professional development programs in institutions not sponsored by DoD.

The Military Services have long been committed to providing quality educational and professional development opportunities for servicemembers.

DoD Military

There are 1.4 million DoD active duty military personnel and another 883,600 in the Guard and Reserve.

The FY98 DoD Budget for Military Professional Development Education was $896 million (includes student and instructor salaries, and other costs).

The Services provide their members with about $135 million in tuition assistance annually.

In FY 1998, there was an average of 11,703 cadets in the three military academies, with a total budget of approximately $800 million.

In FY 1998, 60,187 military members graduated from professional development education at both military and civilian institutions, fully funded graduate education programs at one of the two Service institutions (Naval Postgraduate School or Air Force Institute of Technology) or at a civilian educational institution, or other full-time education programs such as degree completion programs. (Number includes active duty and National Guard/Reserve forces.)

The Department is even involved with educating the children of DoD employees.

Children of DoD Employees

In school year 1997-98, the Department of Defense Education Activity served an estimated 113,000 students in 231 schools and one community college worldwide, with a budget of $1.2 billion.

Department of Defense Dependent Schools (DODDS), which operates overseas, served an estimated 80,000 students in 161 schools and one community college, with a staff of 9,500 located in 14 countries.

In the U.S. system of schools, the Department of Defense Domestic Dependent Elementary and Secondary Schools (DoD DDESS), served an estimated 33,000 students in 70 schools, with a staff of 5,300 located in seven states and the Commonwealth of Puerto Rico, and in Guam.

Editor's Note: This information is in the public domain at http://www.defenselink.mil/news/ on the Internet.

DR. JEROME F. "JERRY" SMITH, JR.
FIRST DOD CHANCELLOR FOR EDUCATION AND PROFESSIONAL DEVELOPMENT
DoD Photo

The Revolution In Business Affairs — The Need To Act NOW

Remarks By The Honorable Jacques S. Gansler, Under Secretary of Defense (Acquisition and Technology)

The following speech was given by Dr. Gansler to the Association of the U.S. Army, Falls Church, Va., Sept. 2, 1998.

M1A1 Abrams Tank

Events of the past few weeks have made it abundantly clear that the future is now. During my nearly 10 months as Under Secretary of Defense, I have warned frequently that achieving the Revolution In Military Affairs and the Revolution in Business Affairs – tandem strategies to maintain our military superiority into the next decade – are urgent and absolutely essential if we are to withstand the variety of asymmetrical threats we face as we enter the 21st century. Unfortunately, those threats are with us now.

Blueprint for Survival

The recent bombings in Kenya and Tanzania only serve to underscore the fact that the threat is real and that there is an urgent need to move the DoD more rapidly toward the dual strategies embodied in the Revolution in Military Affairs and the Revolution in Business Affairs. These are not simply slogans, but a fundamental blueprint for survival that, if successful, can ensure the nation's military superiority well into the 21st century, against any adversary, and under any of a multitude of potential combat scenarios: information warfare, urban combat, chemical/biological attack, terrorism, or nuclear attack by a rogue nation against our homeland or our allies. The issue is clear: If we are not successful, if we do not transform the way we fight, the weapons we use, and the way we acquire those weapons, our security is threatened. Clearly, we have no choice.

M2A2 Bradley Fighting Vehicle

DoD Photos

Editor's Note: This information is in the public domain at ***http://www.acq.osd.mil/ousda/speech*** *on the Internet.*

> **"FOR THE PRESENT, WE MUST STILL INVEST HEAVILY IN UPGRADING CURRENT SYSTEMS SUCH AS THE ABRAMS TANK, THE BRADLEY FIGHTING VEHICLE, AND OUR AGING FLEET OF HELICOPTERS, AND PROVIDE THEM WITH THE MEANS TO TAKE ADVANTAGE OF THE MODERN 'DIGITAL BATTLEFIELD.'"**

SH-60B BACKHAWK HELICOPTER

Obviously, this transformation will not be an easy one. Mao Tse-tung once said that "Revolution is not a dinner party." What he intended by this remark, was to explain away the destruction and carnage associated with the defeat of the Kuomintang in China in the late 40s. Our Revolutions in Military Affairs and Business Affairs have certainly been less bloody – but (as Machievelli warned us) making change in government is extremely difficult and often receives little support, since there are many who stand [for not having] the status quo upset, and few who are willing to fight for the required changes.

Nonetheless, an objective assessment can see that the world of the U.S. military-industrial complex is significantly different today, in many ways, from what it was just five years ago. Acquisition reform has had a major impact on the way we do business; the defense industry has been transformed; and multi-Service jointness is now a major consideration (from weapons planning through military exercises). I am proud of the acquisition workforce at the Department that is working to transform our military capability, modernize our weapons systems, improve performance, cut costs, reduce the workforce, and lower cycle times.

"Robbing Peter to Pay Paul"

While I agree with Mao that getting to this point has not been a "dinner party," the effort so far has been relatively cohesive. I think that the reason for this is that everyone, from Secretary Cohen, General Shelton, and General Reimer, down to our combat personnel in the field, to the welder on the production floor, and to the acquisition people in our buying commands, all agreed that we had to change. Yet the pace and the direction are far from agreed upon.

The dilemma we face right now involves competing – and seemingly unlimited – demands for limited resources. We simply cannot afford all that we would like to do – and, on our present path, even all that we *must* do. With fixed total resources, we have resorted to "Robbing Peter To Pay Paul"; taking from future investments in modernization to maintain current readiness. Yet, we know we *must* develop the *new* systems needed to meet the challenges of early 21st century warfare; and to modernize our *current* equipment in order to maintain our military superiority in the face of the growing technological advances of our potential adversaries – often equipped with systems purchased off the world's commercial or military markets – and their increasing use of asymmetrical warfare.

Countering Asymmetrical Threats

While modernizing, we must simultaneously shift our focus from the traditional weapons platforms (ships, planes, and tanks) to weapons that will counter future asymmetric threats – such as defenses against biological warfare, information warfare, and ballistic missiles. On the offensive side, we must increase our funding on enhanced and secure C^3I and long-range, all-weather precision weapons – implementing the full capability of "reconnaissance/strike warfare."

Interoperability

Additionally, since the most likely combat scenarios for the United States involve *coalition* conflict, on a global scale, we must ensure that the equipment we use is not only interoperable among our Services, but is also interoperable with that of our allies. With the speed of change of technology, and the disparity in defense budgets, this is an increasingly difficult challenge to overcome, but one that is absolutely essential if we are to retain worldwide battlefield dominance.

Globalization

This brings up the issue of the future defense-industrial base. Here, we continue to have the same objectives we have always had – namely, increased efficiency while maintaining competition (both horizontally and vertically). However, we are also faced with the reality of an increasingly global industrial base, and we must take full advantage of it; and yet we must maintain the required control over our advanced-technology classified systems. We realize that globalization increases the risks involved in transfer of militarily significant technology. To eliminate such risks, we must ensure that adequate controls are in place to eliminate the transfer of technology from our allies to third parties (and even to their own commercial firms).

Operating With Legacy Systems for the Foreseeable Future

Finally, we must face the reality that, for the next few years, the vast majority of the systems we will use are those that are already deployed. Yet, because we stopped modernizing over the last decade – when our procurement account dropped by more than 70 percent – we now are spending billions, for example, to maintain an aging fleet of aircraft. By next year, the average age of that fleet will be over 20 years. Flying-hour costs for that aging fleet have risen almost 70 percent during the past four years, and maintenance costs are skyrocketing. Worse still, the age and deteriorating state of these systems are having an effect on readiness. They demand more and more dollars to keep them going.

We know that we must operate, in the near future, with many of these legacy systems as the basis of our force structure. We cannot simply discard them. It is too expensive and impractical, given our current budget constraints. Thus, for the present, we must still invest heavily in upgrading current systems such as the Abrams Tank, the Bradley fighting vehicle, and our aging fleet of helicopters, and provide them with the means to take advantage of the modern "digital battlefield." All this we plan to do. But ask anyone in the Army and he or she will tell you that the time is fast approaching when the Army must focus on building the new rather than "jerry-rigging" the old.

Trapped in a Death Spiral

Unfortunately, we are trapped in a "death spiral." The requirement to maintain our aging equipment is costing us much more each year: in repair costs, down time, and maintenance tempo. But we must keep this equipment in repair to maintain readiness. It drains our resources – resources we should be applying to modernization of the traditional systems and development and deployment of the new systems. So, we stretch out our replacement schedules to ridiculous lengths and reduce the quantities of the new equipment we purchase – raising their costs and still further delaying modernization.

Compounding the problem is the increased operational tempo required by our worldwide role as the sole remaining superpower, which more rapidly wears out the old equipment.

If this were not bad enough, we must also deal with the uncertainty of unanticipated crises, such as the Y2K computer problem, which – in a flat-budget environment – further drain funds from modernization.

To break out of this cycle will be extremely difficult. It will require significant cultural change, a sense of urgency, and implementation of difficult decisions. It will not be enough simply to accept the notion of the *need* for a Revolution in Military Affairs and the *need* for a Revolution in Business Affairs. Actions *now* are essential for our security in the 21st century. It is the urgency to act now that is not universally accepted – by many in the Congress, the military, and the defense industry.

I do not expect it to happen overnight. As Thomas Jefferson said: "It takes time to persuade men to do even what is for their own good." But, if we do not begin to break out of the "death spiral" soon, it will be impossible to do so later.

The required actions are – I admit – both unpopular and extremely difficult. But, I believe, we have no choice. You, of course, know what they are; but let me tick off a few:

- Additional base closures.
- Termination of a number of traditional weapon systems now in acquisition in order to fund the required newer systems.
- Drastic improvement in cycle times (from 18-year developments toward 18 months; and from 40 days for spares order-to-receipt time to four days).
- Competitive sourcing of all but inherently governmental functions; and a rapid reduction in the civilian and military workforce made possible by the increased use of competitive market forces.
- A significant increase in investments for reliability enhancements on currently deployed systems.
- Widespread and full implementation of the "acquisition reforms" initiated over the last few years, including cost as a military requirement and elimination of the current barriers to civil/military industrial integration (such as the government's specialized accounting and auditing systems).
- Full and rapid transformation of the complete DoD logistics system into a much more responsive, significantly lower-cost system.
- Last, but most important, a full and rapid transformation of our military tactics, doctrine, and structure to actually realize the strategy of the Chairman's "Joint Vision 2010."

Information Dominance Means Digitization Now

Achieving these reforms will enable us to cut support and infrastructure and re-allocate these resources to top-priority modernization programs, like "digitization." This overall acquisition program will exploit state-of-the-art communications, sensors, space-based reconnaissance, and computing systems to integrate battle command from the squad to the corps level; provide a relevant common picture of the battlespace at *each* level of command – not just at

the headquarters level or higher; improve joint and multi-national interoperability in combined operations; provide more timely and tailored logistics packages to the field; and enable smaller units to become more lethal and survivable.

We expect to digitize our first Army division within two years; our first corps by the end of 2004; and the whole Army by 2010. One of my major concerns, as I have said, is to assure that we have adequate funding for such programs. If anything, I would like to see us moving even faster in our digitization effort. I believe that information dominance – and the information security that must go with it – are top-priority items for defense funding.

Digitization demonstrates how close we are to a whole new way of warfighting. If we are able to "see, prioritize, assign, precisely kill, and assess" on the battlespace, our joint combat forces will be able to improve their awareness, cut down on response time, and make critical decisions that will increase combat power and effectively dominate any adversary. Simply put, we are trying to remove from the battlespace as much of the "fog and the friction"– the uncertainty and unpredictability – that we can.

Throughout history, gathering, exploiting, and protecting information have been critical elements in achieving military superiority. These essential elements of information awareness will not change. What has changed and will change further are the amount and quality of the information we gather, the speed with which we gather and disseminate it, and how we use it. Most important, perhaps, is the technology we use, particularly, and our ability to adjust our doctrine, tactics, and training to take advantage of it.

Fastest, Strongest, Best in the World

Our unquestioned technological superiority on the battlespace today must be enhanced, extended, and applied in order to enable us to *retain* overall superiority in the future. Our equipment must be the best possible. Our troops must be trained to use it; and our forces must be able to project our power on a global arena. Only if we do that can we achieve our required future security objectives. In this way, in the early 21st century, the Army After Next will continue to be the fastest, the strongest, and the best in the world. I have full confidence that we [can] and will be successful.

DSMC Hosts Noted Author as Guest Lecturer

Recently, as a guest lecturer for the Intermediate Test and Evaluation Course (ITEC), retired Air Force Col. Jim Burton recounted lessons learned and experiences during the 1980s' establishment of the Congressionally created Joint Live Fire Office. In his book, *The Pentagon Wars*, Burton defined his testing theory and detailed what he firmly believed should be examined on any system that carried personnel.

Burton consistently advocated live fire testing for vulnerability of our own platforms as well as those of the former Soviet Union. His position on live fire testing, at times placed him at odds with Program Office personnel during the course of his military career.

When the movie rights for his book were purchased by HBO, he did not have literary control over the movie's format or script. "However," he stated, "by communicating with HBO the serious nature of the subject, I was able to obtain a better balance between the serious aspects of the story and the HBO injection of humor."

Pictured from left: Darryl Cureton; Peggy Mattei; Burton; Ricky Irvin; Jay Gould, Professor of Systems Engineering Management, DSMC. Cureton, Mattei, and Irvin were recent students in the Intermediate Test and Evaluation Course.

Photo by Richard Mattox

SECDEF Hosts DSMC Professor as Keynote Speaker, National POW/MIA Recognition Day

Retired Air Force Col Norman McDaniel – "We Fight From Within, and We Return With Honor"

COLLIE J. JOHNSON

In a Sept. 18, 1998, Pentagon ceremony hosted by Secretary of Defense William S. Cohen, retired Air Force Col. Norman A. McDaniel, a professor at the Defense Systems Management College and former POW, was the keynote speaker for DoD's observance of National POW/MIA Recognition Day. Cohen's invitation to serve as keynote speaker was a singular honor for McDaniel, who represents but one of hundreds of POWs/MIAs from across the nation.

SECRETARY OF DEFENSE WILLIAM S. COHEN REVIEWS THE PROGRAM FOR NATIONAL POW/MIA RECOGNITION DAY WITH KEYNOTE SPEAKER, RETIRED AIR FORCE COL. NORMAN A. MCDANIEL, A PROFESSOR AT THE DEFENSE SYSTEMS MANAGEMENT COLLEGE AND FORMER POW. THE CEREMONY WAS CONDUCTED AT THE PENTAGON ON SEPT. 18, 1998.

Returning With Honor

Welcoming the many veterans and former POWs attending the Pentagon ceremony, Cohen introduced McDaniel as "one of those who endured the trials and trauma as a prisoner-of-war during Vietnam.

"In 1966," Cohen noted, "[then] Captain McDaniel's reconnaissance plane was shot down over North Vietnam. That began a period of six years of confinement, the 'never-ending' years as he later called them, in that unspeakable squalor of hellholes known as the 'Hanoi Hilton' and the 'Zoo.'

"Ladies and gentlemen," Cohen continued, "for over six years, his diet was mostly rice and swamp water. For six years, he endured isolation, interrogations, and torture. But he and his fellow POWs had a motto: 'We fight from within, and we return with honor.'"

Cohen went on to say that Captain McDaniel was one of only a handful of African-Americans held as a prisoner at the time. "The North Vietnamese tried to exploit examples of racism in our country to drive a wedge between Norman McDaniel and America. He refused. His captors had misjudged the courage of this man and the strength of the nation that produced him."

After five years in captivity, at the depths of despair, McDaniel wrote these profound words that Secretary Cohen said, "still capture the full power of McDaniel's quiet strength: *'I'm still a man though I'm badly bent. I'll hope and strive until my life is spent.'"*

Captain McDaniel, Cohen noted, "did indeed return with honor, and his story inspires us to this day."

Fighting From Within

Norman McDaniel – husband, father, veteran, former POW, patriot, and devout Christian. All of those roles were embodied in his remarks as he spoke with sincerity and eloquence.

"It is a distinct honor to be your guest speaker for this very special occasion. All of us here today can be very thankful that we're fortunate enough to be alive

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Photos by Richard Mattox

with hopes for tomorrow...to be free with the liberty to speak and move as we choose...and to be a part of such a great nation with its rich and cherished heritage.

"Millions of Americans who fought before us make us both proud and humble," he told those assembled on the Pentagon River Parade Field, as well as a nationwide audience watching the live broadcast. "Proud because those who have gone before us were loyal, dedicated, and faithful to the extent that they sacrificed their time, talent, and some, even their very lives, to protect this nation and its vital interests. We're humbled because we realize that it is primarily a result of those who have gone before us, that we are able today to be blessed with the freedom and prosperity that we enjoy.

Retired Air Force Col. Norman A. McDaniel, a professor at the Defense Systems Management College and former POW, delivered the keynote address at the Pentagon's observance of National POW/MIA Recognition Day, on Sept. 18, 1998.

"Those of us who have gone in harm's way, engaged in combat, and have been held as prisoners of war," he emphasized, "truly appreciate the importance and the value of life, the preciousness of freedom, and how fortunate we are to be citizens of the United States of America.

"Throughout the history of our nation," McDaniel observed, "we find millions of men and women who have served in the United States Armed Forces extremely well in peace and in war. Ordinary men and women doing extraordinary things to fulfill their military obligations and to maintain the freedom of our country and to keep it strong.

"From where," McDaniel questioned, "came the strength and the courage for *ordinary* men and women to do *extraordinary* things?"

He responded by saying that for him (and he believed for many others also), "that strength and courage comes from a strong faith in God. The God of whom the founders of this great nation depended. The courage and strength that come from those sources compel us and require us to cherish life, to do right, to serve others, and to honor our commitments."

McDaniel related that when he found himself a prisoner of war of the North Vietnamese – a very cruel enemy who refused to abide by the provisions of the 1949 Convention on the Treatment of Prisoners of War, "who treated me and my fellow prisoners worse than the worst of criminals, who subjected us to extremely brutal treatment under harsh and perilous conditions for more than six-and-one-half years" – he was compelled to go far behind just the knowledge of his oath.

Searching Deep Within

Said McDaniel, "I had to go far beyond just the comprehension of the code of conduct...I had to search deep, deep within myself to define what is worth dying for, what is worth living for, and what difference does or will it make? For me, I determined that I was committed to do my utmost, to remain true and faithful to my God, to my country, and to my fellow prisoners."

Of his torture and captivity, he said, "When the torture became so prolonged and so severe that I felt I had reached the limit of my endurance, it was a strong faith in God, dedicated allegiance to my country, a renewed determination to remain faithful and keep the faith with my fellow prisoners, and a life-sustaining love for my family that gave me the strength to endure and to survive."

McDaniel emphasized that he and his fellow American ex-POWs were very thankful "for the honor and recognition that you render us today." But he hastened to add that "this ceremony is for more than just my fellow ex-POWs and myself; this ceremony is also for the families of those who were killed in action and who are still missing in action – to give them the knowledge and the comfort that their loved ones are not forgotten.

"This ceremony is also for those who serve today," he continued, "and those who will serve in the future, to give them confidence that if they should be killed in action, missing in action, or prisoners of war, that they too, will not be forgotten."

Eternal Vigilance

Concluding, McDaniel spoke of sacrifice. Thomas Jefferson, he noted, one of the founders of this nation, spoke truth when he said: "The price of freedom is eternal vigilance." He urged those present and watching across the nation to "never forget the correct definition of, and proper respect for: Duty – Honor – Country...May God bless all of you, and may God Bless America."

AMERICAN FORCES PRESS SERVICE

Test Group Gives Thumbs-Up to New DoD Travel System

RUDI WILLIAMS

WASHINGTON–DoD's new temporary duty travel pay system is faster than a speeding bullet and more gentle than a lamb compared to the old system, in the words of one enthusiastic agency budget officer.

DoD's POW/Missing Personnel Affairs Office was one of 29 organizations at 27 sites worldwide that recently tested DoD's re-engineered travel system. Budget officer Angela M. Talaber praises that new system and believes most of her customers agree with her. One such customer is office spokesman Larry Greer.

"I'm a customer who is old enough to remember the old system, where you had to type or press down on a seven-page claims voucher with a ball point pen," he said. "I know how long it took to get paid. I know what it was like standing in a long military pay line praying that someday, somebody would cut you a check. Or even give you cash, if you wanted to wait long enough.

"With streamlining, the electronic transfers have certainly made my life a lot easier," Greer said. "You need a system that's fast and easy to work to beat inbound credit card bills. This system beats it. You can get paid before your credit card bill comes."

Feedback from the 29 sites revealed a 65-percent decrease in administrative costs, a 31-percent decrease in payment cycle time, and a 100-percent [increase] in customer satisfaction, according to Deputy Secretary of Defense John H. Hamre. The team that rebuilt and streamlined DoD's $3 billion-per-year travel system introduced many private-sector business practices. The new system:

- Reduced complex travel regulations from 220 pages to 17.
- Simplified reimbursement regulations for meals and incidental expenses, and eliminated requirements for receipts for expenses less than $75, except for lodging.
- Established a travel card program to pay for most official business travel expenses – advances, lodging, transportation, rental cars, meals and other incidentals.
- Created one document to serve as the orders, itinerary, voucher, and record of any changes.

Talaber said her office worked with the voucher claims part of the system, but not yet with the electronic travel order phase. She said she expects her management to approve the move soon. "We'll cut costs and save time by using electronic orders instead of paper orders," she noted.

"Our people go all over the world, and the least the government can do is pay them in a timely fashion," Talaber said. "I'd seen a couple of demonstrations of how the new system works. I knew it was something that worked well and management here said, 'OK, we'll try it.'

"So we went into the federal automated travel system in October 1996 as one of the test agencies," she continued. "The first couple of vouchers were experiments. I didn't [try] it with anybody who went overseas or who had a $3,000 or 4,000 reimbursement coming. We got our feet wet with the little bitty baby vouchers, a couple of hundred dollars. Then we realized, hey, they're actually being paid – fast! I've had folks who have filed a voucher at 7 a.m. and it was processed and paid the same day."

She said the only complaints about the new system have been from a few people who've had problems learning new computer software.

"Some of them say, 'I can't remember my password,' 'I can't remember my signature,' 'I don't like this,'" Tal-

aber said. “I guess they perceive it as scary. You have to have a password to get into the system and a signature code password. Sometimes people just get confused. If you don’t use something daily, you can become afraid of it.”

Vouchers from the POW/Missing Personnel Affairs Office are approved electronically and wired to the finance office at Bolling Air Force Base in Washington, where they’re reviewed electronically. Then they’re transmitted to the Defense Finance and Accounting Service Center in Indianapolis for immediate payment, Talaber said. “If finance pays the voucher in the afternoon, most times the money goes to the Federal Reserve Bank the next day,” she said. “Within two days, the voucher is direct-deposited in the traveler’s bank account. The traveler doesn’t even have to go to the bank.

“Before, it was a frustrating, time-consuming paper process,” she said. “You filled out a seven-page carbon form and attached all the little bits of trash paper you saved during your trip – receipts for everything,” she said. “Then you sent it to finance, where it sat in an in-box until somebody got ready to look at it. Then, two weeks to three months later, you got a check in the mail.”

In the search for information to account for America’s missing personnel, specialists in the POW/Missing [Personnel Affairs] Office travel to many locations most DoD employees never visit – Vietnam, Laos, North Korea. Under the new system, a DoD globetrotter’s major currency is a government-contracted charge card, currently American Express but due to change to NationsBank Visa in the fall. Employees are expected to pay expenses with the card whenever possible and to use it in cash machines to draw pocket money when necessary.

“Every hotel I’ve stayed in, in Vietnam, Laos, Cambodia, Russia, and all over the United States, accepts the American Express card,” Greer noted. “Not every street merchant accepts it – you have to have a little bit of money in your pocket to take care of meals and incidentals.”

Talaber said finance doesn’t routinely pay travel advances anymore but does provide cash advances when people head to places where cash machines are nonexistent. On those occasions, the transaction is a simple electronic one. “We send the paperwork electronically one day and the money is electronically posted in the traveler’s checking account the next day,” she said.

“We’re finally treating people like the adults they are,” Talaber said. “We’re making people responsible, as they should be, instead of treating them like children and saying, ‘I don’t believe you, show me those receipts for $2.’

“The new system makes my job much easier, too,” she said. “In the old system, you’d tell people, ‘Well, wait two weeks.’ Then, ‘Maybe give it another week.’ And then, ‘We’ll call finance.’ Under the new system, if you’re not paid in two days, there’s a problem.” Even the few complainers she meets love the part about being reimbursed in two days, she said.

Though mountains of paperwork of old are gone, travelers using the new system are supposed to maintain a file of their receipts. “Random audits are conducted on about 10 percent of vouchers over $2,500,” Talaber said. “Those audited must provide receipts of expenses of $75 or more.” She said she has had only one glitch since implementing the system, and the customer did it to himself. “He’d closed his old checking account and failed to tell finance,” she said. The bank couldn’t make a direct deposit because the man no longer had an account, so the money went back to finance. “They had to cut a check.”

“Guys like me have filed a claims voucher in the morning and, by the end of the day, the money was in the bank,” Greer said. “And I didn’t have to leave my desk, no trip to a pay window, and didn’t have to fill out a seven-copy voucher. People are happy to be treated responsibly.”

Editor’s Note: This information is in the public domain at http://www.defenselink.mil/news on the Internet.

Health Hazard Assessment Program Surfaces As Important Player in Army's Acquisition Process

Sound Systems Engineering From a Health or Medical Perspective

MAJ. W. MICHAEL MCDEVITT, U.S. ARMY • GARY M. BRATT
ROBERT A. GROSS

The U.S. Army Medical Department (AMEDD) has provided commanders with informal health hazard information since the first Surgeon General advised General George Washington on diseases in military camps and hospitals, and on hearing loss among his cannoneers.

This informal program continued during the Civil War, World War I, and World War II until the late 1970's. In 1976, during the development of the M198, 155mm Towed Howitzer, the Army identified blast overpressure hazards. As a result, the Army Surgeon General was asked to address this hazard.

Through a combined effort, AMEDD and the [then] U.S. Army Human Engineering Laboratory overcame this blast overpressure hazard, and the weapon was successfully fielded.

As a result of the M198 success, Army leadership, AMEDD, and the materiel acquisition community recognized the need for a formal AMEDD review of new or improved equipment. Acting on that recognition, the Army Surgeon General formally established the Health Hazard Assessment (HHA) Program in 1981.

By 1983, Army Regulation (AR) 40-10, *Health Hazard Assessment Program in Support of the Army Materiel Acquisition Decision Process,* was in circulation.[1] In 1995, the Army Surgeon General designated the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), Aberdeen Proving Ground, Md., as the Executive Agent for the HHA program. This article is an overview and starting point for program managers who may wish to know more about recognizing, assessing, eliminating, and controlling any health hazards that may surface in their own acquisition programs.

THE AVENGER, AN AIR DEFENSE SYSTEM MOUNTED ON AN M-998 HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE (HMMWV) DURING A LIVE-FIRE EXERCISE.

What is Health Hazard Assessment?

Any answer to that question must first begin with a definition of what constitutes a health hazard from the Army's perspective. A health hazard is an existing or potential condition that can result

McDevitt is the Chief of the Health Hazard Assessment (HHA) Program, Directorate of Occupational Health Sciences, U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), Aberdeen Proving Ground, Md. A former U.S. Army Medical Service Corps Officer, Bratt is currently a Research Fellow with the Logistics Management Institute, McLean, Va., and advisor to the HHA Program. Gross is an Industrial Hygienist/Health Hazard Assessment Program Consultant in the Directorate of Occupational Health Sciences, USACHPPM.

JAVELIN ANTI-TANK WEAPONS SYSTEM DURING AN ADVANCED WARFIGHTING EXPERIMENT (AWE) AT THE NATIONAL TRAINING CENTER, FORT IRWIN, CALIF.

M-109A6 PALADIN SELF-PROPELLED HOWITZER DURING AN ADVANCED WARFIGHTING EXPERIMENT (AWE) AT THE NATIONAL TRAINING CENTER, FORT IRWIN, CALIF.

from system design, the environment, doctrine, operations or use and results in health effects ranging from temporarily reduced job performance to death. The Health Hazard Assessment Program or HHA is the Army's response to that threat.

HHA is one of the Manpower and Personnel Integration (MANPRINT) domains that integrate seven areas of expertise into the Materiel Acquisition Decision Process (MADP).[2] Required for all types of acquisition including new developments, materiel changes, and nondevelopmental items, HHA is the process used within the Army to identify, assess, and eliminate or control health hazards associated with the lifecycle management of materiel items such as weapon systems, munitions, equipment, clothing, training devices, and information systems.

The HHA program addresses the potential effects of materiel systems health hazards on the personnel who test, produce, use, maintain, repair, or support the systems. Through application of biomedical knowledge and principles, HHA directly supports Army officials engaged in developing, manufacturing, operating, maintaining, demilitarizing, and disposing of materiel systems. In other words, HHA is systems engineering from a health or medical perspective.

In civilian circles, the HHA program is closely related to aspects of occupational health, preventive medicine, environmental medicine, industrial hygiene/safety, and pollution prevention. The distinction, however, between the HHA program and its civilian counterparts obviously is the program's emphasis on the soldier-system interactions with military-unique operations and equipment.

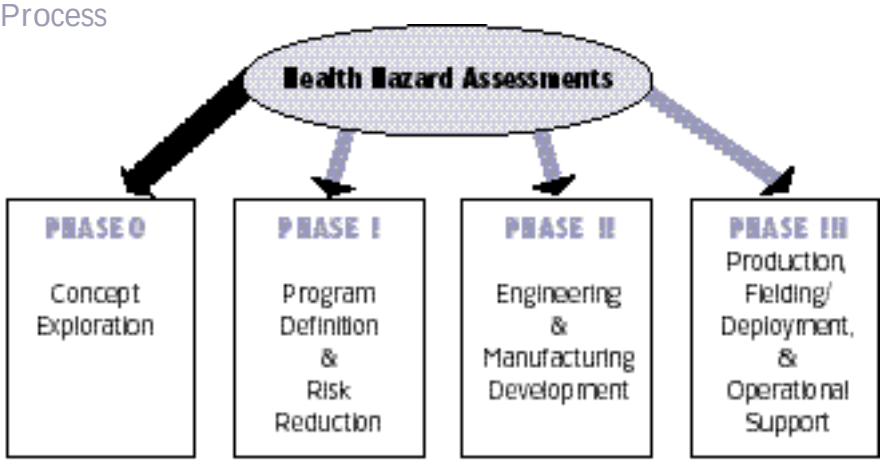
The HHA process considers mission needs, concept analysis, research, development, testing, evaluation, production, procurement, training, use, storage, system maintenance, transportation, demilitarization and disposal throughout the entire life cycle.

health hazards that are not considered, eliminated, or controlled will impact on the one resource the nation cannot afford to sacrifice: the soldier, sailor, airman, and Marine.

How the HHA Program Works

The Army's HHA activities are inextricably linked with its military warfighting doctrine. The individual soldier is the most important element in the performance of Army operations. Since training with future weapons and equipment will create the potential for an increase in adverse health hazard exposures, a decrease in soldier survivability,

FIGURE 1. Addressing Health Hazards During the Acquisition Process



and an increase in environmental contamination, proper management of these hazards is critical to protect Army resources, ensure high quality and realistic training, and improve and maintain readiness. Commensurate with its mission, the goals of the HHA Program are to: eliminate health hazards, reduce injury and illness, enhance soldier performance and system effectiveness, and conserve soldiers' fighting strength.

The Assessment Program

The Army performs HHAs in all phases of the acquisition process (Figure 1) because hazards eliminated or controlled early in the process will inevitably require less attention later in the life cycle.[3] The thicker arrow in Figure 1 shows the critical phase for HHAs within the acquisition process.

Addressing HHA early in the MADP and placing issues into program documents to support the initial milestone decision review, requests for proposal, statements of work, and other program documents are critical. Optimally, identification of health hazards occurs in Phase 0, Concept Exploration, by the formation of a MANPRINT Joint Working Group (MJWG) according to AR 602-2, *Manpower and Personnel Integration (MANPRINT) in the Materiel Acquisition Process.*[4]

The integrated concept team (ICT) and the integrated product team (IPT) are rapidly replacing the MJWG. Institutionalized across all the Services as part of DoD's Acquisition Reform strategy, the goal of the ICT and the IPT is to resolve all health hazard issues during Phase I, Program Definition and Risk Reduction. Ultimately, program managers will find that early consideration of health hazard issues allows for a greater potential to influence design and process changes to prevent health hazards. This approach avoids program delays and costly modifications to the materiel or equipment already produced or fielded.

In addition to supporting decisions on eliminating or reducing system hazards, Army HHA reports support preparation of the following documents:

- MANPRINT Assessments
- System MANPRINT Management Plans
- Test and Evaluation Master Plans
- Detailed Test Plan
- Market Investigations
- Safety Releases
- System Technical and Training Publications
- Milestone Decision Packages
- Statements of Work
- Requests for Proposals

Also, Army HHA reports provide valuable information for source selection evaluation boards, ICTs, and IPTs.

The Assessment Process

The combat or materiel developer initiates the HHA process by sending an HHA request to the U.S. Army Materiel Command (AMC) Surgeon, who provides an important medical interface between the AMEDD and the Army acquisition community. Upon receipt, the AMC Surgeon screens the request package for completeness and identifies potential health hazards. (The request process is detailed later in this article.) If the materiel is free from potential hazards or all hazards are adequately controlled, the AMC Surgeon provides a statement to that effect in an endorsement to the developer. Called a "turnaround," the AMC Surgeon's endorsement serves as the required HHA report documentation.

Systems with uncontrolled hazards are endorsed to USACHPPM by the AMC Surgeon for completion of the HHA report. Upon receipt, USACHPPM assembles a team of subject matter experts

FIGURE 2. Common Health Hazards Encountered with Army Materiel

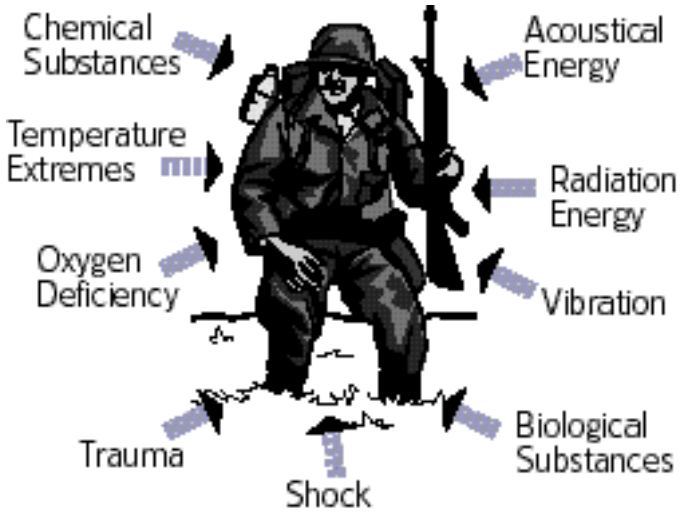
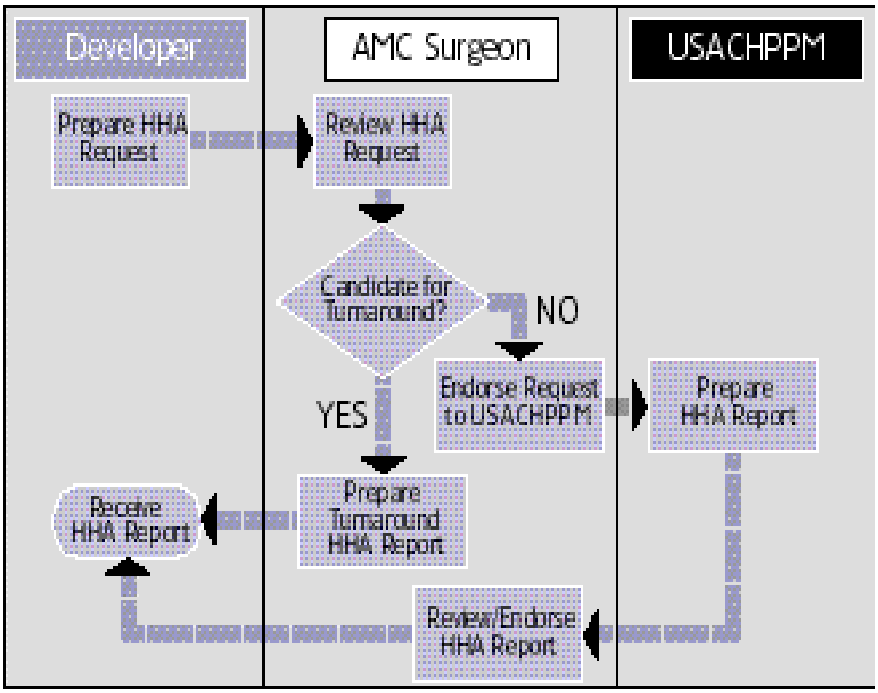


FIGURE 3. The HHA Process



to assess the hazards inherent in the system. Figure 2 depicts the nine most common health hazard categories described in AR 40-10.

Once the subject matter experts complete their assessments, the lead project officer integrates their assessments into an HHA report. The HHA program manager then forwards the completed report through the AMC Surgeon to the developer. A thorough and definitive document, the report also contains recommendations to eliminate or control health hazards. To assist materiel risk managers, the report also provides risk assessments, as well as potential medical costs avoided if the recommendations are adopted. Figure 3 illustrates the complete process.

In addition to the definitive HHA report, several other types of HHA reports exist;

How to Request a Health Hazard Assessment

When a unit, organization, or agency requests an HHA, the assessment is performed by a matrixed team of USACHPPM and other AMEDD scientists and engineers who address the potential health hazard issues and assign RACs to potential hazards. As discussed earlier in this article, requesting an HHA for all types of acquisitions and early in the acquisition process is an important aspect of program safety and ultimate success. Army Lt. Col. Michael J. Leggieri, formerly of the AMC Surgeon's Office, outlines the request process for materiel developers in three easy steps:

3-STEP PROCESS FOR PREPARING HHA REQUEST MEMORANDUM

Step 1. Prepare an HHA request memorandum with the following information:

- Materiel developer's name, address, major command, and phone/facsimile numbers.
- System nomenclature.
- Program category (acquisition category).
- Purpose of the system.
- System components.
- Life-cycle system phase.
- Funds availability to support HHA work (if necessary).
- System prototype availability (where/when).
- Purpose of the HHA (e.g., support milestone decision review).
- Date the HHA report is required.
- Number of systems to be fielded.
- Number and type/military occupational specialty (MOS) of personnel who will work with the system.
- For nondevelopmental items, a description of the health standards applied in the product design and health problems that surfaced during testing or market investigation.

Step 2. Enclose the following information (if available), with your request memorandum:

- Safety assessment report.
- Operational requirements document.
- Mission needs statement.
- System MANPRINT management plan.
- Test and evaluation master plan.
- Detailed test plan.
- Acquisition strategy.
- Independent evaluation plans.
- Integrated logistics support plan.
- Technical test/user test reports.
- Program review documentation.
- Operational summary mode/mission profile.
- Previous HHA reports.
- Record of environmental consideration.
- Life-cycle environmental document.
- Waste stream analysis.
- Other health hazard reports (i.e., reports from commercial vendors, other military services, etc.).
- Sampling data and test results.

Step 3. Send the request to the AMC Surgeon at the following address:
Commander
U.S. Army Materiel Command
ATTN: AMCSG-H
5001 Eisenhower Avenue
Alexandria, Va. 22333-0001

Normally, it takes 90 days from the date of receipt of a complete request package to prepare an HHA report.

FIGURE 4. RAC Matrix

High ← → Low

Severity	Hazard Probability				
	A Frequent	B Probable	C Occasional	D Remote	E Improbable
I Catastrophic	1	1	1	2	3
II Critical	1	1	2	3	4
III Marginal	2	3	3	4	5
IV Negligible	3	5	5	5	5

High ↕ Low

generally, they fall into one of the following categories:

Initial HHA. An initial HHA is performed when adequate information or supporting data is not available. In this case, the HHA program staff request additional information to assess hazards.

Updated HHA Report. An updated HHA report is an assessment of a materiel system that has undergone a modification or upgrade. In this case, only the modification or upgrade and any other portion of the system it affects are assessed.

Quantifying Health Risk

Basically, risk is a probability statement. In the HHA process, however, the term "health risk" combines the probability of exposure to a hazard and the severity of the potential consequences, based on the mission profile or intended use.

The Army assesses health risk with a risk assessment code (RAC) (Figure 4). Estimating the hazard severity (HS) – the severity of the medical effects caused by exposure to a hazard – is the first step. The next step is to estimate the hazard probability (HP) – the probability of exposure to the hazard. The matrix cell where the values for HS and HP intersect shows the appropriate RAC.

The resulting RAC may range from 1 (very high health risk) to 5 (very low health risk). For example, a hazard of marginal severity (HS = III) with an exposure assessed as probable (HP = B) has a moderate overall risk (RAC = 3). The risk assessment matrix is similar to the one described in AR 385-16, *System Safety Engineering and Management*;[5] Field Manual (FM) 101-5, *Staff Organization and Operations*,[6] and AR 70-1, *Army Acquisition Policy*.[7]

The RAC, along with its HS and HP, provides the developer the degree of health risk from unabated hazards. Thus, determining RACs allows the materiel developer to compare and prioritize hazards for elimination.

Quantifying Costs and Lost Time Avoided

Fortunately, a model is available that calculates potential medical costs and lost time avoided when materiel developers implement HHA recommendations (Figure 5). Developed by USACHPPM, the model framework considers the hazard involved, the HS, the HP, and the potential medical outcomes for system operators as a result of an injury or illness. The basic model calculates the estimated yearly costs for clinic visits, hospitalization, lost time, disability compensation, rehabilitation, and survivor benefits for each hazard source assessed. The total is then summed as medical costs per year.

The basic model calculates the estimated yearly costs for clinic visits, hospitalization, lost time, disability compensation, rehabilitation, and survivor benefits for each hazard source assessed.

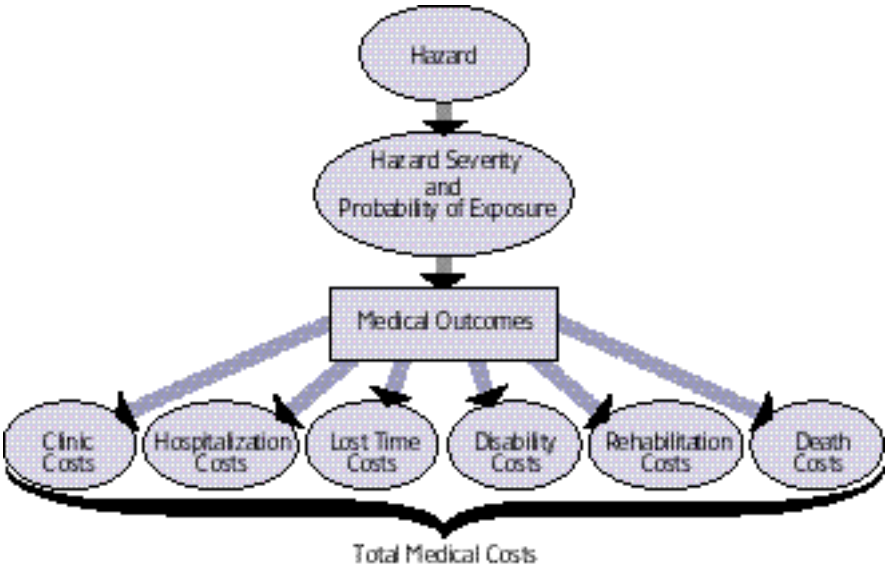
At this point, the HHA report provides a breakdown of the basic cost components to the materiel developer along with estimates of lost time. Once in the hands of developers and acquisition decision makers, this information allows them to see how unabated health hazards might impact readiness and increase a system's total life-cycle cost to the Department of Defense.

Success Stories

Within the HHA program, true success stories abound. Among them are a few highly recognizable, award-winning examples:

The JAVELIN. The JAVELIN is a man-portable, shoulder-fired antitank weapon designed to fire from enclosed positions, foxholes, or in open terrain. Early developmental testing identified the potential for excessive lead exposures associated with the propellant when fired from an enclosure. Additional testing and blood lead analysis determined the extent of the hazard. The AMEDD developed a model to predict the opera-

FIGURE 5. Basic Model for Estimating Medical Costs



tor's lead exposure levels. This resulted in the user's ability to fire up to 12 missiles from an enclosed area, which exceeded the system's combat design criteria.

The PALADIN. The PALADIN is the Army's newest full-tracked, self-propelled howitzer. Early HHA Program involvement with the PALADIN identified lead as a hazard associated with propellant charges used in the weapon. Lead foil in the propellant is used as a decoppering agent for the copper that builds up in the gun tube each time a projectile is fired. The volatilized lead was migrating from the gun tube to the crew compartment. A high-efficiency particulate air filter was added to the ventilation system to eliminate the hazard, and propellant developers are searching for a suitable alternative to lead foil. Lessons learned in the PALADIN were transferred to the CRUSADER Program.

The AVENGER. The AVENGER is an air-defense system using STINGER missiles and a .50-caliber machine-gun turret mounted on the back of a High Mobility Multipurpose Wheeled Vehicle (HMMWV). Weapons are fired remotely or with the gunner in the turret, behind glass. An early shoot-off competition among candidate systems identified gunner heat stress as a significant hazard. The HHA program recommended a cooling system for the crewmembers. USACHPPM's recommendation was originally rejected due to high cost; however, because of experience in Desert Shield and Desert Storm, the AVENGER is being retrofitted with an air-conditioning system.

The AVENGER was also the first system to benefit from a military-unique exposure standard for hydrogen chloride (HCl). The STINGER missile rocket motor generates HCl when fired, and HMMWV cab positions were overexposed during early testing. Engineering controls including rigid door blast deflectors and reinforced body panels were applied. A tri-Service effort with the Committee on Toxicology (National Research Council, National Academy of Sciences) resulted in a realistic military-unique exposure standard for HCl. Application of the engineering controls and military-unique standard facilitated fielding the AVENGER.

Standing By to Help

The Army HHA Program benefits all of the military services since the Army is the lead developer for most land-based warfighting systems. As such, the HHA staff stand ready to provide their expertise in several areas: provide sound technical advice to combat and materiel developers; support acquisition and program meetings as resources allow; prepare HHA reports and other MANPRINT program documents; and annually support about 100 acquisition programs that are in various stages of development.

In summary, health hazards that are not considered, eliminated, or controlled will impact on the one resource the nation cannot afford to sacrifice: the soldier, sailor, airman, and Marine. Ultimately, failure on the part of a program manager to manage health hazards effectively can consume precious procurement dollars and hinder training and readiness.

Editor's Note: For more information, contact the Health Hazard Assessment Program at USACHPPM. Inquiries may be directed as follows:

Comm: (410) 436-2925
DSN: 584-2925
E-mail: mchbtsohh@chppm-ccmail.apgea.army.mil

Those interested are also invited to visit the USACHPPM Home Page at http://www.131.92.168.27/hha/ on the Internet.

ENDNOTES

1. AR 40-10, *Health Hazard Assessment Program in Support of the Army Materiel Acquisition Decision Process,* Washington, D.C.: Headquarters, Department of the Army, 1991.
2. The other MANPRINT domains are human engineering, system safety, manpower, personnel, training, and soldier survivability.
3. Department of Defense (DOD) Regulation 5000.2-R, Change 1, *Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs,* Nov. 4, 1996.
4. AR 602-2, *Manpower and Personnel Integration (MANPRINT) in the Materiel Acquisition Process,* Washington, D.C.: Headquarters, Department of the Army, 1994.
5. AR 385-16, *System Safety Engineering and Management,* Washington, D.C.: Headquarters, Department of the Army, May 3, 1990.
6. FM 101-5, *Staff Organization and Operations,* May 31, 1997.
7. AR 70-1, *Army Acquisition Policy,* Washington, D.C.: Headquarters, Department of the Army, March 31, 1993.

Preparing to Meet Tomorrow's Undefined Threats with Today's Acquisition Reform Initiatives

NMD Joint Program Office Staying One Step Ahead

LT. COL. CRAIG MACALLISTER, U.S. ARMY • CLIFFORD REEVES
DONALD KEITH

The application of Department of Defense (DoD) Acquisition Reform initiatives in a joint program environment presents unique acquisition management challenges to the National Missile Defense (NMD) Program. Service parochialism; geopolitical considerations; the presence of "rice bowl" programs, processes, and procedures; as well as institutionalized organizations can and do present significant roadblocks to joint acquisition programs.

The NMD Development Challenge

To remove real and perceived roadblocks and arrive at cost-effective solutions to these acquisition environment challenges, Army Maj. Gen. Joe Cosumano, Jr., the NMD Program Manager, challenged industry to accept a large measure of program responsibility for system integration.

As part of that challenge, he tasked industry to propose how they would integrate the diverse Service-oriented development programs into a single product called the NMD System. Further, to facilitate acquisition of this NMD System and ensure appropriate leveraging of Service personnel expertise, he directed that the NMD JPO create a "federated" management organizational structure.

The JPO is a multi-Service organization, a sub-unit within the Ballistic Missile Defense Organization (BMDO) with its own distinct charter. As such, it has the unique challenge and mission to acquire, develop, and integrate a defense system that provides the United States with an active Ballistic Missile Defense to counter limited ballistic missile attacks from threat nations. Congress increased this procurement challenge with an aggressive and ambitious schedule.

Simply stated, the schedule for completion of the NMD System technology development to counter a "threshold" threat is CY 2000. Then, should the legislative and executive branches of government decide to deploy an NMD System, it must be deployed and operationally capable within another three years. The common description for this requirement is the "NMD 3+3 Program."

To reduce the development and integration risk of the NMD System development, NMD acquisition strategists directed the acquisition of a Lead System Integrator (LSI) contractor. The LSI will design, develop, integrate, test, and support NMD System development planning. Two large aerospace companies, The Boeing Company and the United Missile Defense Company, competed for this contract.

During the initial phase of the LSI procurement, the companies were awarded a six-month Concept Definition contract, starting in April 1997, to propose an NMD Program architecture. The second phase of the LSI procurement (Execution Phase) began with award of the LSI contract by BMDO's Acquisition Executive, Air Force Lt. Gen. Lester Lyles, to Boeing.

Personal Reflections

Each of the military services fully embraces the tenets of Acquisition Reform. They document their reforms and the resulting accomplishments in numerous periodicals and trade magazines. Yet, as I researched joint acquisition principles while attending the Advanced Program Management Course at the Defense Systems Management College, very few articles documenting joint Acquisition Reform successes were available. This does not suggest that joint program offices are devoid of Acquisition Reform successes; it simply means that there is scant documentation about joint acquisition programs available for review. This article shares how the NMD Joint Program Office (JPO) in the Ballistic Missile Defense Organization (BMDO) successfully applied Acquisition Reform initiatives to the NMD joint acquisition program.

–Lt. Col. Craig MacAllister, U.S. Army
August 1998

Macallister is a Senior System Integrator, National Missile Defense Joint Program Office, Ballistic Missile Defense Office, Arlington, Va. Reeves is the Senior Systems Analyst Logistics Engineer, and Keith the Chief Logistics Engineer, respectively in the Advanced Systems Group, Science Applications International Corporation, Arlington, Va.

Aggressive Use of Acquisition Reform

Because the joint nature of the NMD Program demands aggressive application of DoD's Acquisition Reform principles, each Service supporting the NMD JPO tailored the DoD Directive 5000.1 acquisition fundamentals to their own particular acquisition requirements and circumstances. They did this to obtain the best value for the NMD Element development contracts now under their control that are part of the NMD System, and will eventually transition to the LSI contractor.

Adaptation of previous Service-unique acquisition practices to the present needs of the NMD JPO is a significant task and presents difficult management concerns, choices, and options to the Services. In addition, the Service organizations supporting the JPO have long-standing organizational/management structures that may also require modification to address the requirements of the NMD JPO material development.

Federated Management

The management of a geographically distributed NMD JPO presented numerous coordination challenges to NMD's Program Manager (PM). To meet these challenges, JPO implemented numerous initiatives to enhance program control. Specifically, the creation of a cutting-edge Intranet to rapidly disseminate key program information, extensive use of secure NMD video-teleconferences, NMD PM All-Hands Update memoranda, and the orchestration of numerous Integrated Product Teams (IPT) kept NMD stakeholders, BMDO management, and JPO personnel informed.

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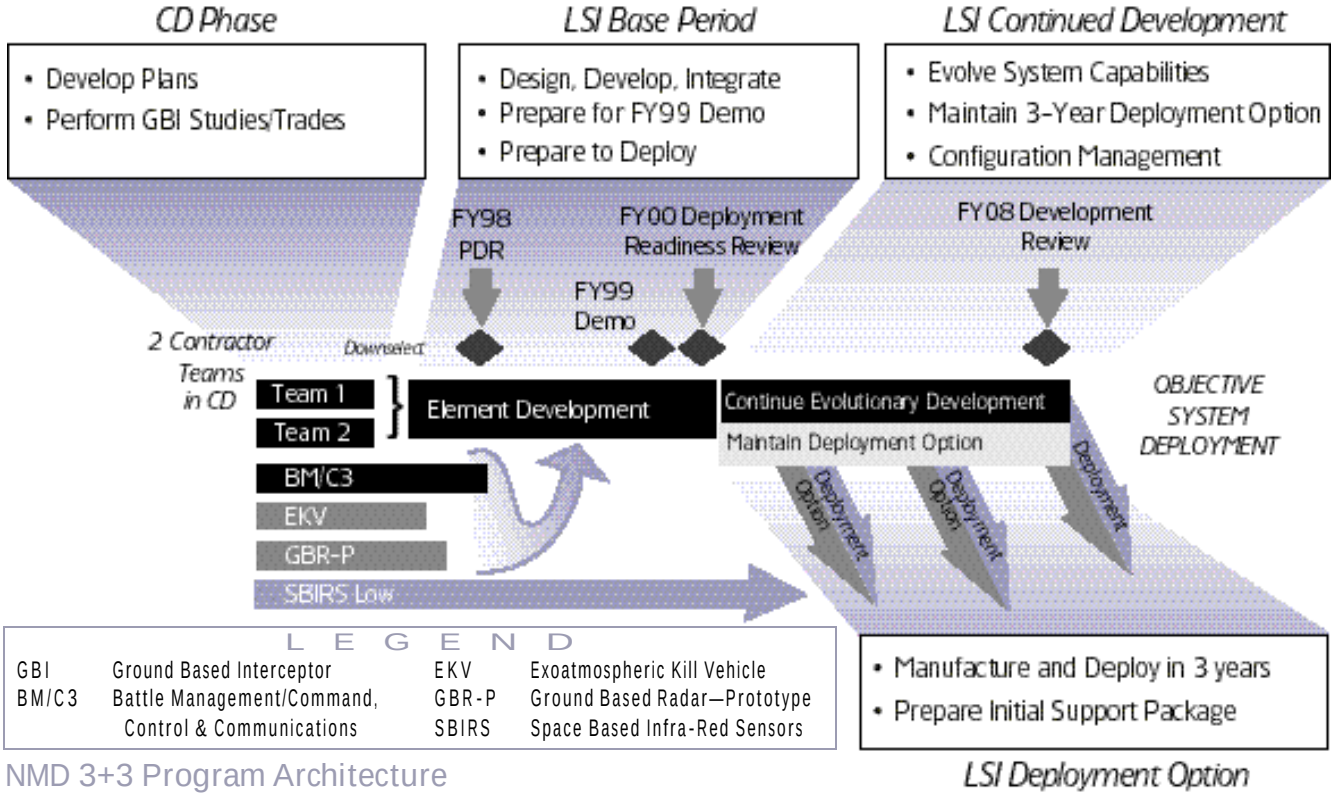
The Services' role in the NMD System development over the course of many years has and will be significant. Over the years, the Services managed numerous technology programs that currently provide the foundation of NMD System development activities. Boeing, the government's LSI contractor, will partner with a federated JPO, and assume development and integration responsibility for the NMD System.

The LSI, leveraging upon past Service efforts, will select/modify existing program work and even initiate new NMD Element developments (if required) to satisfy NMD user requirements. With its



NMD 3+3 Program Architecture

System-level perspective, the LSI contractor will have the authority to allocate or re-balance Element-level requirements.

The prominent, enhanced integration role of the LSI contractor is a paramount ingredient of the government's plan to make the 3+3 NMD development and deployment a reality. Only a System-level approach to NMD integration can ensure timely development decisions by all parties.

Do Lessons Learned Apply?

The last major land-based missile development system designed and deployed to provide the United States with a Ballistic Missile Defense capability was the SAFEGUARD system. A fundamental question to answer is whether the *now* NMD System development can use the *then* SAFEGUARD program as a model. The correct answer is yes, no, and maybe.

In a broad sense, the "yes" answer includes allowances for 20-40 years of technology improvements and cost growth. Many observers point to the similarities between NMD and SAFEGUARD planning that started in 1955. Congress halted this U.S. Army Air Defense program effort short of full operational capability in 1975.

In 1976, Congress ordered the deactivation of the interceptors and put most of the facilities in Army "caretaker" status. Now, 23 years later, SAFEGUARD "lessons learned" provide a valuable reference for developing the NMD System.

On the "no" side, consider the present deployment time required for NMD and contrast it with the time allowed to develop the SAFEGUARD Anti-Ballistic Missile Defense site. While this latter task took much longer than that allocated to NMD (three years), the totality of the SAFEGUARD site and the number of its missiles were much larger. Thus, a "no" answer applies. However, aspects of the historic program still apply to NMD facilities and military construction requirements.

A major difference was that the *then* SAFEGUARD program was a "national priority" program. The *now* NMD is a constrained development program that will neither start construction nor deploy until justified by an actual or perceived Intercontinental Ballistic Missile threat.

Therefore, the lesson learned is to do early planning for a transition to execution of a National Priority Program and not wait until the National Command Authority orders deployment to start planning. *Now* as *then*, the NMD System and its deployment must become a top national priority if the NMD is to be operational within the proposed three-year period. Thus, you have a "maybe" answer.

Significant lessons learned can also come from "The Stanley R. Mickelsen SAFEGUARD Complex, North Dakota Pro-

THE SECOND PHASE OF THE LSI PROCUREMENT (EXECUTION PHASE) BEGAN WITH AWARD OF THE LSI CONTRACT BY BMDO'S ACQUISITION EXECUTIVE, AIR FORCE LT. GEN. LESTER LYLES, TO BOEING. PICTURED ARE MEMBERS OF THE GOVERNMENT TEAM DURING A BRIEFING TO COMPETITORS PRIOR TO CONTRACT AWARD.

LSI COMPETITORS INSPECTING A DEACTIVATED AND DEMILITARIZED SITE.

Photos by Donald Keith

A broken relic of a proud past. Aspects of the SAFEGUARD Anti-Ballistic Missile Defense historic program still apply to NMD facilities and military construction requirements today.

Older Perimeter Acquisition Radar provided timely warning for SAFEGUARD Anti-Ballistic Missile System.

ject History." This 1995 document illustrates how industry and the government had to work together as a close-knit team to activate a new operational anti-ballistic missile site. This fact and the need for integrated teamwork, prompted the NMD leadership to ensure early involvement by industry in NMD integration planning.

Even the Theater High Altitude Air Defense Program (THAAD) provided NMD invaluable "lessons learned" in shaping its acquisition strategy and developmental test program.

First, NMD enhanced the emphasis placed on the development/improvement of specific procurement processes (system engineering, software development, and system testing). Then we modified the NMD's current System Evaluation Plan (analogous to a Test and Evaluation Master Plan) to ensure that appropriate "checks and balances" actually verify satisfaction of system performance requirements. In addition, NMD established common software metrics and checkout procedures for test and operational-related software across all NMD Elements.

Second, we focused on another lesson learned to ensure that the NMD test program includes adequate, event-driven, flight test intervals. We also changed the NMD test program to provide sufficient time to ensure appropriate consideration and resolution of anomalies, failures, and delays before new testing begins. In addition, we decided upon a deliberate series of pre-flight ground tests with emphasis on quality management to ensure that the test-configured hardware and software is fully "wrung-out" before the flight test.

Third and perhaps the most important lesson we learned from the THAAD Program, is that flight test success requires management commitment. Improved processes can only happen with the PM's support and direction. Only a concerted management effort can ensure that "details" receive adequate attention and that execution of pre-flight checks and post-flight analyses receive the requisite discipline. An oft-repeated adage applies here: "Those who do not learn from history, are doomed to repeat it."

Use of Theater Missile Defense Technology for NMD

The informed American public asks, "Why not use existing U.S. anti-missile systems to perform the NMD task?" Rapt taxpayers glued themselves to Cable News Network footage during Operation Desert Storm. They saw U.S. Army Air Defense Batteries, using a modified and unproven missile from the Patriot Air Defense System, engaging Iraqi SCUD missiles. This technical achievement is indelibly etched in America's collective memory. Consequently, the same American taxpayer now wants to know why the Patriot missile that shot down SCUD missiles cannot be used against an Intercontinental Ballistic Missile and its re-entry vehicles.

The answer to this question rests on an understanding of the difference between the "performance envelope" for a Theater Missile Defense (TMD) missile and that required for an NMD missile. In simple terms, TMD's performance envelope (requirements) has a comparatively limited need for battlespace (kill distance) and a lesser requirement for defense against sophisticated threat missiles traveling at much higher speeds than SCUD missiles. The difference in the *TMD capabilities* and *NMD requirements* is significant when you compare the battlespace and distance requirements of a missile defense to protect the national homeland against Intercontinental Ballistic Missiles.

Both defense systems, however, require and use early warning data. The NMD's need for timely information, accurate intelligence, and large quantities of data necessitate a much higher level of coordinated battle planning and rapid interface with other existing national resources.

The difference in warning data requirements exists because for a tactical battle scenario, the warning time is very short for a missile intercept. The intercept occurs at a relatively short range from the interceptor launch site in tactical battle.

On the other hand, an Anti-Ballistic Missile system capable of defending the United States needs a comparatively long warning of a hostile launch. An Anti-Ballistic Missile also requires a very fast, long-range, and extremely accurate hit-to-kill interceptor to eliminate a threat as far away from U.S. territory as possible.

Some TMD technologies apply to the development and acquisition of the NMD. One example of TMD technology in the NMD toolbox is the Ground-Based Radar, developed as part of the THAAD System. This and other ground-based sensor systems represent a cornerstone of present NMD System planning.

More Aggressive Acquisition Implementation

Early in 1997, the BMDO Contracts Directorate released a Request for Proposal (RFP) for an LSI contract to determine who, in American industry, was interested in "integrating the NMD System, following DoD Acquisition Reform guidance on *performance-based requirements."*

The use of performance-based requirements was a hallmark of BMDO's acceptance of Acquisition Reform and best commercial practices. Industry response to the draft RFP was good, reflected by a large number of firms (77) asking to be placed on the "bidder's list" and from subsequent receipt of strong, credible proposals.

Following the LSI contract award, the government is transitioning its integration functions and support to its "new integration partner." The transition will truly test the resolve of the acquisition streamlining initiatives adopted and agreed to between the JPO, the Services, and the LSI contractor.

Acquisition Reform and Streamlining Initiatives That Worked

Since the genesis of the LSI concept and procurement JPO implementation, numerous Acquisition Reform measures and streamlining initiatives have arrived to support the NMD challenge. These include:

Use of Integrated Product and Process Development (IPPD) Teams. The NMD Program makes extensive use of Office of the Secretary of Defense oversight and program IPT infrastructure. Five teams are now in place.

Program IPTs are flexible working teams that exist for as long as necessary to satisfy the intended objectives. As such, they hold regularly scheduled meetings and use the principal NMD Program members and stakeholders to resolve issues, reduce risks, and impart "value added" to the NMD. The current government IPT role will change to accommodate the LSI contractor's participation as needed.

Implementation of Electronic Commerce. Creating an NMD Internet "LSI Home Page" helped provide the NMD Team and bidders with up-to-date information. During the LSI procurement, 77 potential bidders registered to receive procurement data. The cost of providing this information on the World Wide Web is insignificant in comparison to reproduction, labor, and postage costs to mail the same information.

Digital Bidders' Library. The NMD JPO used a CD-ROM, "Bidders' Library" for the LSI CD Competition. Using electronic media, potential bidders received two compact disks containing 89 complete reference documents. Each disk contained tens of thousands of pages of reference material. The use of commercial technology avoided duplicating and distribution costs for many hundreds of pounds of bidder reference material.

Since CD contract award, the JPO has sent hundreds of additional documents to the competing contractors in digital format (whenever possible), with a small number distributed in hard copy.

Use of a Statement of Objectives (SOO). The JPO used five pages of NMD requirements described as objectives rather than the more familiar multi-page, detailed work statements or requirements in a traditional Statement of Work.

Focus On "Performance-Based" Specifications. The JPO focused on "performance" rather than detailed designs to better concentrate on satisfying user needs. This practice provides the LSI maximum trade space without compromising performance requirements. The source of the performance requirements was the user's Capstone Requirements Document, embodied in a 21-page portion of the NMD Systems Requirements Document, which is now a part of the LSI contract.

Requiring Minimal Contract Data Requirements List/Contract Line Items (CDRL/CLIN). In a change that runs counter to past practice, the LSI Offerors were tasked to propose only those CDRLs that add value to the program or provide required government data/information.

Publication of a Single Acquisition Management Plan (SAMP). A single document, the NMD SAMP, provides a broad description of the NMD Program Manager's Plan for management of the NMD Program. The SAMP also describes the NMD management plan for the 3+3 program, the JPO management structure, and a consistent program management baseline.

Use of a Paperless Source Selection Process. To streamline the LSI source selection process, the evaluators used an automated source selection software program tool in the Concept Definition and the Execution Phase evaluations. This tool allowed the evaluators to enter comments and ratings and forward results "up the chain" via a secure local area network.

Holding Focused Technical Interchange Meetings. The JPO provided site visits to give the LSI offerors a better appreciation of those government assets available for integration into the offerors' plans. In addition, biweekly offeror meetings were held with the NMD Program Manager to provide timely updates, status check, and identify development issues. (The government opened normally closed meetings to the LSI competitors during the six-month Concept Definition phase and provided them insights into NMD Element development.)

Tangible Benefits of Innovative Solutions

Early application of the Integrated Process/Product Team concept will enable the JPO and the LSI to "bond" simultaneously, agreeing on work requirements and solutions, at a predetermined level of empowerment for the LSI. In addition, the NMD JPO's continuing use of other streamlining features like a paperless database, media conferencing, and an Internet "hot news" Web site for real-time information exchange, moves NMD acquisition into the category of "world class" acquisition practices.

The intrinsic value of the Ballistic Missile Defense Organization's management thrust is to rapidly identify and eliminate non-value-added functions and requirements, and still provide tracking and compliance with the user's Capstone Requirements Document.

Streamlining NMD Management of the LSI Contractor

The NMD team wears the mantle of responsibility to develop insight into the feasibility and value for the associated costs of the contractor's efforts and processes. For that reason, the LSI solicitations and ensuing contracts did not include requirements for standard government management approaches or manufacturing processes.

As part of that responsibility, the JPO will evaluate contractor products and not the processes used to build the product, be it hardware, software, or facilities. An essential issue for the government is to determine the value of each product in light of its Life Cycle Cost and its contribution toward meeting performance objectives and risk reduction.

The Realities Of NMD Streamlining

Resources to fund NMD's development partner must come out of the existing NMD budget. The NMD development infrastructure must allow the LSI to satisfy NMD requirements as a normal expeditious task by using streamlining initiatives, void of previously cited, costly acquisition roadblocks.

Significant cost savings are possible by eliminating fractured and incomplete integration efforts, managed at the subsystem level of the NMD. The transition to system-level integration and performance management for NMD will ensure that the timely satisfaction of NMD System requirements is closely monitored.

Sharing Performance Responsibility

In light of economic and political realities, it makes sense to share NMD performance responsibility with a defense contractor if, and only if, there is assurance the contractor can satisfy the NMD System performance objectives faster and more economically than the government can working alone.

The prospect that the LSI can or even will satisfy the government's performance task with a slight five-page Statement of Objectives and 22 pages of system performance requirements is difficult to accept for some.

This uneasiness and reluctance translated into a significant challenge for NMD's LSI Source Selection Team. They had to ensure that the winning proposal included a workable plan to satisfy the performance objectives, and had a strong NMD integration approach and fundamental credibility.

Government Acquisition Reform is mandatory if we in government are going to reduce DoD program costs. However, just streamlining government-mandated methods and processes cannot do the job alone. The new order of acquisition business requires more reliance, trust, and faith in the commercial sector.

The NMD JPO took advantage of DoD's acquisition initiatives and streamlining reforms to provide a basis upon which the NMD System can adapt to multiple threat considerations and scenarios. The NMD Program and team will continue to:

- Mature the performance capability of the NMD System until called upon to meet some future evolving threat.
- Evolve and employ acquisition streamlining/reforms and leverage lessons learned and quality program management.
- Make the NMD government/industry team concept stronger in order to make NMD a reality.

The objective is to stay ahead of the undefined threats and continue to provide a viable, cost-effective defense. The bottom line is for the NMD team to integrate, test, and plan for the most effective land-based anti-ballistic missile protection of the United States that is humanly and technologically possible.

It's Not a Bird, It's Not a Plane, It's an SEGV!

Navy Rear Adm. "Lenn" Vincent, DSMC Commandant, displays the "Bird of Prey" at the Advanced Program Management Course (APMC) Graduation Dinner-Dance for Class 98-2, held in August at the Radisson Plaza Hotel, Alexandria Va. The "Bird of Prey" is Section A's winner in the best Stored Energy Ground Vehicle (SEGV) runoff. The SEGV simulation began in 1988 as a small elective in the Program Management Course [now renamed APMC] to provide hands-on experience that conventional classes did not provide.

Organized as Integrated Product Teams within hypothetical corporations, participating students work from the contractor's perspective. Student teams plan and manage their personal study time and account for each hour in a labor accounting system, while simultaneously designing a simulated, scaled-down, unmanned ground vehicle capable of ammunition resupply through a minefield.

Currently, DSMC uses a number of in-class simulations that put future program managers in situations where they learn proven and timely "hands-on" applications to hone their skills beyond theory.

Don Chislaghi, Class President, represents the 240 graduates of APMC 98-2 at the APMC Dinner-Dance in August. The typical student of Class 98-2 was 41.1 years old, with 17.7 years of government service and 11.1 years of prior acquisition experience. On average, 80.4 percent of the students had a masters degree or higher.

Photos by Richard Mattox

ACQUISITION REFORM

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net

DEPARTMENT OF DEFENSE

Under Secretary of Defense (Acquisition and Technology) (USD[A&T])
http://www.acq.osd.mil/
ACQWeb offers the Defense Federal Acquisition Regulation Supplement online, a library of USD documents, and jump points to many other valuable sites.

Deputy Under Secretary of Defense (Acquisition Reform) (DUSD[AR])
http://www.acq.osd.mil/ar
Hot topics in AR; reference library; *AR Today* and *AR Now;* DUSD(AR) organizational breakout; "Ask a Professor" assistance.

Acquisition Systems Management (Defense Acquisition Board [DAB] Executive Secretary)
http://www.acq.osd.mil/api/asm/
Documentation, including Department of Defense Directives 5000.1 and 5000.2-R, Major Defense Acquisition Programs List, and more.

Director, Test, Systems Engineering & Evaluation (DTSE&E), USD(A&T)
http://www.acq.osd.mil/te/programs/se
Systems engineering mission; Defense Acquisition Workforce Improvement Act information, training, and related sites; information on key areas of systems engineering responsibility.

Defense Acquisition Deskbook
http://www.deskbook.osd.mil
Automated acquisition reference tool covering mandatory and discretionary practices as well as procurement wisdom.

Defense Acquisition University (DAU) and Acquisition Reform Communications Center (ARCC)
http://www.acq.osd.mil/dau
DAU course and schedule information; consortium school links; acquisition documents and publications. ARCC provides Acquisition Reform training information, including satellite broadcast information!

Army Acquisition Corps (AAC)
http://www.dacm.sarda.army.mil
News; policy; publications; contacts; training opportunities.

Army Acquisition
http://www.acqnet.sarda.army.mil
Documents library; training and business opportunities; past performance; paperless contracting; labor rates.

Navy Acquisition Reform
http://www.acq-ref.navy.mil/
Information on Industrial Base Integration, World-class Practices, the Acquisition Center of Excellence, and training opportunities.

Navy Acquisition, Research and Development Information Center
http://nardic.nrl.navy.mil
News; announcements; acronyms; publications and regulations; technical reports; "How to Do Business with the Navy."

Naval Sea Systems Command
http://www.navsea.navy.mil/sea017/toc.htm
Total Ownership Cost (TOC); Background and Documentation; Reduction Plan; Implementation Timeline; Process; TOC reporting templates.

Air Force (Acquisition)
http://www.safaq.hq.af.mil/
Reducing TOC; career development and training opportunities; library; links.

Air Force Materiel Command (AFMC) Contracting Laboratory's Federal Acquisition Regulation (FAR) Site
http://farsite.hill.af.mil/
FAR search tool; *Commerce Business Daily* Announcements (CBDNet); *Federal Register;* Electronic Forms Library.

Headquarters, Air Combat Command (HQ ACC) — Contracting Division
http://www.acclog.af.mil/lgc/lgc.htm
Business opportunities; acquisition regulations; policy guidance and technical assistance in areas such as: performance measurement, International Merchant Purchase Authorization Card (IMPAC); commercial practices; outsourcing and more.

DoD Acquisition Workforce Personnel Demonstration Project
http://www.crfpst.wpafb.af.mil/
Federal Register and Waivers Package; documents and briefings; reference material; Frequently Asked Questions (FAQ); links to related sites.

Defense Advanced Research Projects Agency (DARPA)
http://www.arpa.mil
News releases; current solicitations; "Doing Business with DARPA."

Defense Information Systems Agency (DISA)
http://www.disa.mil
Structure and mission of DISA; Defense Information System Network; Defense Message System; much more!

Defense Systems Management College (DSMC)
http://www.dsmc.dsm.mil
DSMC educational products and services; course schedules; *Program Manager* magazine and *Acquisition Review Quarterly* journal; job opportunities.

National Imagery and Mapping Agency (NIMA) [Formerly Defense Mapping Agency (DMA)]
http://www.nima.mil
Geospatial and imagery information; publications; business opportunities.

Defense Modeling and Simulation Office (DMSO)
http://www.dmso.mil
DoD Modeling and Simulation Master Plan; services; resources; activities.

Defense Technical Information Center (DTIC)
http://www.dtic.mil/
Scientific and technical reports; products and services; registration with DTIC; special programs; much more!

Joint Electronic Commerce Program Office (JECPO)
http://www.acq.osd.mil/ec/
Policy; newsletters; Central Contractor Registration; Value Added Networks; assistance centers; Electronic Commerce/Electronic Data Interchange (EC/EDI) Handbook; EC training.

Open Systems Joint Task Force
http://www.acq.osd.mil/osjtf
Open Systems education and training opportunities; studies and assessments; projects, initiatives, and plans; reference library.

ACQUISITION REFORM

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net

Government Education and Training Network (GETN) (For Department of Defense Only)
http://www.afit.af.mil/Schools/DL/schedule.htm
Schedule of distance learning opportunities.

Joint Advanced Distributed Simulation (JADS) Joint Test Force
http://www.jads.abq.com http://www.jads.abq.com
JADS is a one-stop shop for complete information on distributed simulation and its applicability to test and evaluation and acquisition.

Government-Industry Data Exchange Program (GIDEP)
http://www.gidep.corona.navy.mil
Federally funded co-op of government and industry participants that provides an electronic forum to exchange technical information essential during research, design, development, production and operational phases of the life cycle of systems, facilities, and equipment.

FEDERAL CIVILIAN AGENCIES

ARNET (Joint Effort of the National Performance Review and Office of Federal Procurement Policy)
http://www.arnet.gov/
Virtual library; federal acquisition and procurement opportunities; best practices; electronic forums; business opportunities.

Federal Acquisition Institute (FAI)
http://www.faionline.com
Virtual campus for learning opportunities as well as information access and performance support.

Federal Acquisition Jump Station
http://nais.nasa.gov/fedproc/home.html
Procurement and acquisition servers by contracting activity; CBDNet; Reference Library.

General Accounting Office (GAO)
http://www.gao.gov
Access to GAO reports, policy and guidance, and FAQs.

General Services Administration (GSA)
http://www.gsa.gov
Online shopping for commercial items to support government interests.

Library of Congress
http://www.loc.gov
Public laws; legislation; vetoed bills; Congressional Internet services.

National Performance Review (NPR)
http://www.npr.gov/
NPR inititatives; "how to" tools; customer service; newsroom; online resources; accomplishments and awards.

National Technical Information Service (NTIS)
http://chaos.fedworld.gov/ordernow/
Online service for purchasing technical reports, computer products, videotapes, audiocassettes, and more!

Small Business Administration (SBA)
http://www.SBAonline.SBA.gov
Communications network for small businesses.

U.S. Coast Guard
http://www.uscg.mil
News and current events; services; points of contact.

INDUSTRY AND PROFESSIONAL ORGANIZATIONS

Commerce Business Daily
http://www.govcon.com/
Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

Electronic Industries Alliance (EIA)
http://www.eia.org
Government Relations Department includes links to issue councils.

National Contract Management Association (NCMA)
http://www.ncmahq.org
"What's New in Contracting?"; educational products catalog.

National Defense Industrial Association (NDIA)
http://www.ndia.org
Association news; events; government policy; *National Defense* Magazine.

International Society of Logistics
http://www.sole.org/
Online desk references that link to logistics problem-solving advice.

Computer Assisted Technology Transfer (CATT) Program
http://www.catt.bus.okstate.edu
Collaborative effort between government, industry, and academia. Learn about CATT and how to participate.

TOPICAL LISTINGS

DoD Specifications and Standards Home Page
http://www.dsp.dla.mil
All about DoD standardization; key POCs; FAQs; MilSpec Reform; newsletters; training; non-government standards; links to related sites.

Earned Value Management
http://www.acq.osd.mil/pm
Implementation of Earned Value Management; latest policy changes; standards; international developments; active noteboard.

Fedworld Information
http://www.fedworld.gov
Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

GSA Advantage
http://www.fss.gsa.gov
Go to "GSA Advantage" for assistance in using the government-wide IMPAC Card.

If you would like to add your Web site to this list, please call the Acquisition Reform Communications Center (ARCC) at 1-888-747-ARCC. DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact the DAU Webmaster at: dau_webmaster@acq.osd.mil

A Bimonthly Magazine
of the Defense Systems
Management College

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